A COMPARISON OF THREE TECHNIQUES TO PROMOTE CAREER DECISION-MAKING IN COMMUNITY COLLEGE STUDENTS

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This is to certify that the

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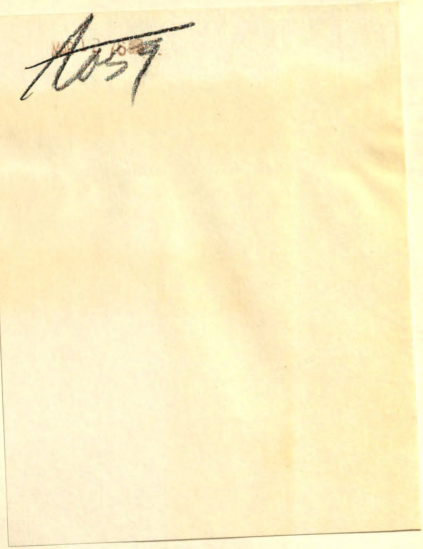
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ABSTRACT

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CAREER DECISION-MAKING [illegible]
COLLEGE [illegible]

By

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The purpose of this study was to prepare and investigate the effects of three techniques to promote career decision-making in community college students. Letters were sent to a random selection of students at Lansing Community College who were undecided about their curriculum preference during Spring term, 1974 registration. Fifty subjects volunteered to receive vocational assistance and were randomly assigned to the following groups: (a) traditional one-to-one counseling, (b) programmed self-instruction, (c) programmed self-instruction accompanied with multimedia materials, and (d) control. Before treatment began, each subject initially took Holland's Vocational Preference Inventory (VPI).

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The purpose of this study was to compare and investigate the effects of three techniques to promote career decision-making in community college students. Letters were sent to a random selection of students at Lansing Community College who were undecided about their curriculum preference during Spring term, 1974 registration. Fifty subjects volunteered to receive vocational assistance and were randomly assigned to the following groups: (a) traditional one-to-one counseling, (b) programmed self-instruction, (c) programmed self-instruction accompanied with multimedia materials, and (d) control. Before treatment began, each subject initially took Holland's Vocational Preference Inventory (VPI).

Subjects assigned to the traditional one-to-one counseling group were counseled individually by one of three full-time counselors at L.C.C. The VPI was interpreted, and the interviews followed the procedures

typically used by the counselors with any person who needed assistance in choosing a career or a vocation.

Subjects assigned to the second group, the programmed self-instruction group, used Graff's (1973) Self Help Career Guidance Program. This is a programmed manual that provided information and structured tasks that dealt with various aspects of selecting a career. Subjects also interpreted their own VPI using a uniform guide prepared especially for this instrument. Each subject worked alone and without the assistance of any counselor or other resource person.

The third group, the programmed self-instruction plus multimedia group, followed the same procedures as the programmed self-instruction group. In addition, subjects were exposed to various multimedia materials. They viewed an audiovisual slide presentation which visually depicted factors relating to career selection, and listened on cassette tape to information which covered the following areas: decision-making, using the Occupational Library, and the world of work.

Subjects assigned to the control group were inactive during the two-week period the experimental manipulations were being conducted. Assistance was provided for this group at the end of the treatment phase.

After subjects completed treatments, and before the control group received assistance, all subjects were

asked to complete a Self-Report Questionnaire. This questionnaire measured the satisfaction subjects felt about different aspects of the vocational assistance received. At the bottom of the questionnaire, subjects were asked if they had decided upon a new career.

The hypotheses were tested using a 4 x 2 fixed factorial design. The four levels of groups were crossed with sex of the subjects. Two covariates, age and self-control, were included in the design. The data were analyzed using a multivariate analysis of covariance (MANCOVA) on the 12 measures of the Self-Report Questionnaire. For the remaining dependent measures, a univariate analysis of covariance was employed.

Significant differences were found in the amount of curriculum changes for each group, and in the satisfaction with the vocational assistance received. Subjects in the programmed instruction plus multimedia group made the most changes to a specific career area, and rated highest of the groups on 8 of the 12 measures on the Self-Report Questionnaire. There was no significant sex x group interaction, and no significant differences in the amount of changes made in relation to the time to complete treatments.

The findings indicate that programmed self-instruction accompanied with multimedia materials is a

viable alternative to one-to-one counseling for assisting vocationally undecided community college students who volunteer for counseling.

Reference

Graff, R. W. Self help career guidance program. Southern Illinois University at Carbondale, 1973.

A COMPARISON OF THREE TECHNIQUES TO PROMOTE CAREER DECISION-MAKING IN COMMUNITY COLLEGE STUDENTS

By

John A. Malacos

A DISSERTATION

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DOCTOR OF PHILOSOPHY

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DEDICATION

To my wife, Elaine, who has helped me feel that love is a many splendored thing.

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There have been several people who have had an impact on my personal and professional growth. Dr. Bob Winborn, my chairman, could certainly be counted as one of them. He has always given freely of his time and has provided me with the necessary direction to complete my graduate studies. If ever there was an appropriate model to follow, Dr. Winborn is a perfect example. To him, I owe more than what this dissertation will bring for me.

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clerical staff in the counseling department at L.C.C. who made the project run as smoothly as it did--Kris Wilson, Terri Williams, Pat Dexter, and Sandy Evans.

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CHAPTER I

THE PROBLEM, RATIONALE, AND RELATED RESEARCH

Need

Over the past several years, increasing attention has been given to what has become popularly known as career education. One result of this thrust has been attempts by counselors and other guidance workers to provide students with adequate information and sound decision-making skills to make appropriate career choices. However, despite the extended consideration given to this aspect of counseling, many questions still remain concerning the effectiveness of counselors who provide vocational counseling.

Ginzberg (1971) has argued that counselors have been demonstrably ineffective in helping students in vocational development. A study by Graff and McClean (1970) revealed that a large portion of clients (63%) indicated that regardless of level of training, counselors did not provide them with adequate information about vocational opportunities and requirements or how to make

educational and vocational decisions. Many reasons can be hypothesized as to why findings, such as Graff and McClean report, exist. First, counselor education programs typically provide only one course in vocational counseling. The emphasis is with social and emotional problems. Thus, the new counselor tends to enter the field with only a cursory knowledge of vocationally related problems. Often he has little or no field experience in this area. Secondly, few intrinsic and extrinsic reinforcements are associated with vocational counseling. In high school, statistics are maintained for the number of seniors who matriculate to college, particularly four-year institutions. Little attention is given to those who are struggling and searching for a career choice not related to college. In community colleges and four-year schools, this condition still prevails as more emphasis is focused on helping students solve their personal and academic problems so that they may eventually graduate. The end goal, then, is the number of degree graduates, and not necessarily the number of students who are satisfied with the degree they received.

Last, no procedural or systematic way to do vocational counseling exists that is grounded in empirical research. Theorists like Holland, Roe, Super, and Tiedeman have hypothesized and provided research on how one chooses a career; but they and others have yet to

devise a counseling process to handle vocational problems. Consequently, many counselors follow the traditional practice of providing an interest inventory and disseminating vocational information. Magoon (1964) looked at a content analysis of several practitioners' interview behavior. It revealed that there are a number of content areas where the counselor repetitively goes over the same material with many different individuals without regard to client individual differences.

Holland (1974) quite poignantly suggested several reasons for the deficiencies of vocational assistance:

1. Counselors reach only a small proportion of the population of those who need help. Studies show that less than 10% of college students use the counseling center.
2. The cost of the service is usually high due to the person-to-person treatments traditionally given.
3. The constructive influence of vocational service is relatively low.
4. Educational institutions that provide vocational assistance rarely participate in research and evaluation. If research is done, seldom are programs changed to correct the deficiencies.
5. Educators who train counselors are conservative and are addicted to the personal relationship

as a method of counseling. Consequently, they reinforce expensive and traditional practices in their students.

A need appears, then, to experimentally discover more effective ways of helping people make career choices. Crites (1969) has argued that we must continuously try different experimental treatments for assisting students in vocational development. This need is particularly important for community college students. Wigent (1974) found that almost 50% of the students in his community college sample lacked a high degree of certainty in regard to their career decisions. Since community colleges serve many individuals who would normally not enter college, they are faced with a large student body widely diversified in interests, goals, and achievement levels. In addition, the wide scope of the curriculum offered at a community college adds to the difficulty of making a career choice. Thus, most community colleges have made vocational counseling a primary objective. To accomplish this task, special classes, vocational exploration groups, and traditional one-to-one counseling are used. However, there has been a paucity of reports in the guidance literature as to the outcomes of such experiences at the community college level (Anderson & Binnie, 1971). With the projected enrollment of 3.3 million students in community colleges by 1975 (Marland,

1972), creative, time-saving, and innovative ways of doing vocational counseling need to be established for this ever-growing population. This need is particularly evident when one looks at a study by Elton and Rose (1970) which showed that only 17% of the vocationally undecided freshmen persisted to graduation in contrast to 43% of those who professed a career commitment.

Holland (1971) has summed up the problem that exists. He said,

> As always, there are not enough counselors to provide vocational guidance for all. And, well-trained or not, the effectiveness of traditional vocational guidance is only fair. In addition, the traditional one-to-one relationship is expensive for the client and often wasteful of counselor time and talent. Finally, the computerized systems for coping with the great need for vocational guidance are usually expensive, frequently impractical, and often atheoretical [p. 167].

Purpose

The purpose of this study was to compare and investigate the effects of three techniques to promote career decision-making in community college students. More specifically, three distinct techniques of helping people make career choices were experimentally manipulated in order to examine their effectiveness with people who were undecided about their career choice. The three techniques were: (a) traditional one-to-one counseling, (b) a programmed self-instruction procedure, and

(c) a programmed self-instruction procedure accompanied with multimedia materials.

A secondary purpose of this study was to examine the relative importance of the counseling relationship. There is a continuous debate among theorists and practitioners as to the significance and practicality of the counselor-client relationship. This study attempted to look closely at this variable to ascertain whether the absence of it could still produce changes in behaviors. Furthermore, many people believe that there exist certain counseling behaviors that only professionally trained counselors can perform. An attempt was made to assess the effectiveness of having people with little training interpret their own test scores and perform other functions that were heretofore performed by trained professionals.

Finally, it was hoped that one result of this study would be a revision and improvement in the current ways of helping students make appropriate career choices with the minimum of time and money expended. The need for reaching many people with as small a cost factor as possible is easily apparent. This study represented one potentially practical way of meeting this need.

Theory

During the 1950's, Rogers (1951) espoused a theory of counseling which was to have (and continues to

have) a profound effect upon the nature of counseling and personality change. He hypothesized that there were six necessary and sufficient conditions for counseling to occur:

1. Two persons are in contact.
2. One, the client, is in a state of incongruence, being vulnerable, or anxious.
3. The other, the therapist, is congruent in the relationship.
4. The therapist experiences unconditional positive regard toward the client.
5. The therapist experiences empathic understanding of the client's internal frame of reference.
6. The client perceives, at least to a minimal degree, the therapist's unconditional positive regard and empathic understanding.

Rogers stated that when these conditions exist, personality change inevitably and invariably occurs. However, Ellis (1959, 1962) has challenged these conditions. First, he noted that people can change, through reading or listening, without being in contact with a counselor. Second, some people, while congruent and relatively unanxious, have improved their personalities through general life experiences. Third, instances

have been reported where the therapist was emotionally disturbed, yet the client's condition improved. Fourth, some clients have benefited from counseling in spite of being treated by therapists who "do not have any real positive regard for their patients, but who deliberately try to regulate the lives and philosophies of these patients for the satisfaction of the therapist's own desires (Ellis, 1962, p. 114)." Fifth, while acknowledging the importance of empathic understanding, instances remain whereby clients who have been helped in therapy have officiously helped their friends without the presence of empathic understanding. Sixth, cases exist of paranoid patients who clamored that they were never understood, yet who eventually came to realize the therapist's internal frame of reference.

Behavioral therapists have also taken issue with the importance of the relationship in counseling. Wolpe (1958) hypothesized that the relationship between the counselor and the client is of little significance. The importance of the relationship, which accounts for success in all approaches, "is the reciprocal inhibition of anxiety responses by the antagonistic emotional responses evoked in the interview [p. 93]." The relationship, as related by Kanfer and Phillips (1969), is explained by what is described as positive social reinforcement and expectancy congruence between the

counselor and the client. In general, then, while realizing the existence of the relationship as a factor in counseling success, most behavioral therapists view relationship variables as nonspecific effects and tend to minimize their importance.

A resolution of this theoretical controversy does not appear close at hand. What needs to be done is to show that behavior change occurs not when the necessary and sufficient conditions are present, but rather that change will not occur when they are absent, as in the case of programmed instruction or other similar procedures.

Another theoretical base for this research study centers around the process of vocational development. Psychoanalytic conceptions of career choice (Bordin, Nachmann, & Segal, 1963) have emphasized the critical life experiences of the first six years of life as determinants of later adult career patterns. Roe (1956) originally affirmed the importance of early parent-child relationships but recently has revised her thinking to include the notion that later life factors such as marriage, chance, and educational level are crucial for making career choices (Roe, 1972). Super's (1957) developmental self-concept theory provided the notion that a person progressively advances through life stages and eventually selects a career that best finds

expression in the development and implementation of his self-concept. The trait-factor approach was advanced by Holland's (1966) Career Typology Theory. A person selects particular occupational classes (Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic) and levels within these classes, based on the knowledge he has about himself and about different occupations. Little use is made of the counseling interview. More emphasis is placed on providing exploratory experiences and first-hand contact with the world of work.

How the counselor describes the process of vocational development and career choice will greatly affect the approach he uses in vocational counseling. The counselor's theoretical biases will determine whether he emphasizes early childhood experiences, builds a relationship between himself and the client, or deemphasizes the interview in place of extra-curricular activities.

The final theoretical consideration in this research deals largely with the way people learn. Skinner (1953, 1968) has challenged three classical concepts of learning. Briefly, they are as follows:

1. Learning is a result of doing. Skinner raised the question whether a person will simply respond a second time as a result of having done it once.

2. Learning comes from experience. Again, Skinner maintained that a person learns nothing from experience alone. Being in contact with the environment does not assure that it will be perceived.

3. Learning results from trial-and-error. Although a person learns from errors, correct behavior is not simply what remains "when erroneous behavior has been chipped away."

Skinner developed from these ideas his operant conditioning principles in which behavior is controlled and changed by the consequences it produces. These principles led him to develop teaching machines and programmed instruction. The result was that people were able to learn at their own pace, and learning became a matter of acquiring concepts along a hierarchy. The likelihood of appropriate responses being made by an individual is increased through the application of positive reinforcement.

The three theoretical issues previously mentioned--the role of the relationship in counseling, theories of vocational development, and ways in which people learn--raise some important questions: Can behavioral change occur without the presence of a warm and empathic counselor? Does vocational counseling require the one-to-one

interview to be effective? Can people learn to change their behavior and make decisions through a program of self-instruction?

Review of the Literature

A substantial literature has developed which attempts to provide answers to the questions in the above paragraph. An effort was made to limit the review to only those studies which were relevant to the issues of vocational counseling under investigation. Although the review crossed many areas, it examined the following general categories: (1) a comparison of groups versus individual counseling; (2) the use of media and computers in counseling; (3) methods of test interpretation; (4) analysis of the effectiveness of programmed texts; (5) personality variables associated with vocational decision-making; and (6) criterion outcomes used to determine the effectiveness of vocational counseling.

Groups vs. One-to-One Counseling

Many research studies have compared the technique of using groups in vocational counseling with the traditional one-to-one approach (Bilovsky, McMasters, et al., 1953; Catron, 1966; Hewer, 1959; Hoyt, 1955; Krumboltz & Thoresen, 1964; Ofman, 1964; Smith & Evans, 1973; Kuenn, 1974). These studies have provided some evidence that vocational counseling in groups was statistically more

effective. Other studies, however, found either no differences or that group counseling was not a significantly useful treatment (Poulin, 1972; Graff, Danish, & Austin, 1972; Johnson & Graff, in print). A study by Hanson and Sander (1973) revealed differential effects of individual and group counseling on realism of vocational choice. Individuals who were judged to hold unrealistic career choices were better helped in an individual setting, and overrealistic people were better helped in a group setting.

Overall, although not conclusive, past research indicates that groups tend to be more efficient and less time consuming in improving information-seeking behavior and helping students select accurate career choices.

Media and Computers in Counseling

The use of media as an adjunct to counseling is a relatively recent practice. The application of media for training of counselors laid the groundwork for its more widespread use. Media for Interpersonal Process Recall (Kagan, et al., 1969) for microcounseling (Delaney, 1970; Ivey, Normington, et al., 1968; Haase & DiMattra, 1970), and for teaching general counseling skills (Eisenberg, 1971; Gysbers & Moore, 1970; Poling, 1968; Yenawine & Arbuckle, 1971), have helped demonstrate that such techniques can be efficiently and effectively utilized. Kagan (1970) has shown that media can be adopted in many areas of guidance and counseling.

In relation to vocational counseling, media are gaining in importance. A large part of vocational counseling involves the dissemination and assimilation of large amounts of vocational information. Magoon (1964) pointed out three inadequacies of the typical oral communications of the counselor in an interview setting: (a) conversations rarely are highly articulate; (b) the counselor usually repeats the same information with many clients; and (c) even if the counselor's verbal behavior is articulate, it remains a once-occurring event with little chance for the client to review what has been said.

Reardon (1973) has also indicated some deficiencies of the traditional approach:

> Information should be presented in broad-based, flexible, easily accessible, innovative forms or modes. Counselors and their offices should not be the dissemination point. Books, file cabinets, and contacts with others are also too restrictive. (Career information) service requires the innovative use of media and technology to put students and others in contact with facts [p. 499].

Various types of media are now being used for several aspects of the vocational counseling process. Whitfield and Glaeser (1969) used microfilm to stimulate vocational explorations. To provide information in many occupational areas, McGuire (1973) created tape recordings of relevant work information and broadcast them over the radio. Shelton (1973) made individual cassette tapes of job information related by individuals who

worked in 83 different career areas. Videotapes have been used by Singer and Wright (1970) as stimuli for group discussions for those interested in vocational decision-making.

The effects of the use of media in vocational counseling have been investigated under several experimental conditions. Peterson (1971) compared audio versus video presentations of occupational information. He concluded that although both groups were more effective than a control group, the audio presentation was the least expensive. However, the group which received video information indicated more occupational preference changes.

To disseminate preliminary information, Norman (1969) used audio, visual, and audiovisual groups. He found that the visual group (simply reading information on a mimeographed form) resulted in fewer people needing to return for additional counseling. This suggested that they were more satisfied with the information they initially received. He concluded that automated techniques could present routine information with more accuracy and less fatigue than a counselor. Some questions, however, may be raised about Norman's assumptions and conclusions. For example, not returning for additional counseling may indicate that the visual group was more discouraged by the original information it received.

Bloss (1970) found no differences between groups who were presented career information through a gaming technique or through a group guidance class that utilized film strips and audio recordings. He did find, though, that there was a sex difference. Girls in his high school sample of 10th graders gained more accurate information than boys about career alternatives and opportunities available to them.

Comparing a programmed text with a video-tape method, Puryear (1972) concluded that the programmed text was immediately more effective. However, any initial gains or differences were lost after three weeks.

Individual counseling employing reinforcement techniques was compared with a group receiving audio recordings on the process of looking for a job, job outlook, use of test results, and systematic ways to study interests, abilities, and desires (Borman, 1972). No differences were found although the main effect was complicated by the presence of a significant interaction between the treatment and level of motivation.

The use of computers for distributing occupational information and assisting in career decision-making has become more widespread as newer programs are established. Current programs in existence include MOLD (Johnson & Myrick, 1972); VOCGUID (Cassel & Mehail, 1973); CVIS (Harris, 1968, 1970); SIGI (Sinick, 1971); VIEW

(Whitfield & Glaeser, 1969); VOGUE (Dubato, 1968); ISVD (Tiedeman & Dudley, 1967); and CAOGP (Impellitteri, 1967).

Melhus (1971) compared computer-assisted vocational choice with traditional vocational counseling with a sample of high school sophomores. Readiness for counseling served as another main effect variable. Although there was no difference between groups, an interaction occurred as students who were rated low in their readiness for counseling were more effective with the traditional approach.

Interpreting Test Information

Since vocational counseling often involves the use of test interpretation, various studies have attempted to investigate the effects of different approaches. Tipton (1969) compared the effectiveness of programmed counseling and face-to-face counseling in interpreting ability test scores. Using understanding of concepts as the dependent variable, he found no initial differences. However, a one-month posttest revealed that any improvements diminished for the programmed-interpretation group and increased somewhat for the counselor-interpretation group. Seaquist (1970) did find a significant difference between a group receiving programmed SVIB results compared to a group that was simply given the information in conventional manuscript style.

Studies have differed in comparing test interpretation given in individual and group settings. Whereas Wright (1963) found evidence to support the use of groups, Lane (1952) and Folds and Gazda (1966) found no differences. Walker (1965) studied four groups: individual, group, individual with visual aids, and group with audiovisual aids. He reported no significant differences in the ability of the groups to recall test scores. However, the individual procedures were significantly higher when personal acceptance of test scores was examined.

Effectiveness of Programmed Texts

In previously cited studies, the effects of programmed counseling have been given (Puryear, 1972; Tipton, 1969; Seaquist, 1970). Increased interest in this area has resulted in the commercial production of several programmed texts. Holland (1970) has devised the Self-Directed Search (SDS), a programmed manual that can be used by people between the ages of 15 and 50 who seek career choices. Results have shown that accurate career choices can be made with the SDS (Baldwin & Schnuelle, 1972; Holland, et al., 1972). Three other currently produced texts include Self Help Career Guidance Program (Graff, 1973), Self-Counseling Manual (Gilbert & Ewing, 1973), and The Self Help Vocational

Decision-Making Booklet: An Adaption of Magoon's Effective Problem Solving Manual (Danish, Graff, & Gensler, 1969).

Research by Graff, Danish, and Austin (1972) compared the effectiveness of three kinds of vocational counseling: individual, group, and programmed self-instruction. Using 219 freshmen and sophomore college students, they found that the programmed self-instruction approach was rated significantly better by clients in the following areas: becoming informed of vocational opportunities and requirements; learning how to make educational-vocational decisions; and setting up educational and vocational goals consistent with abilities, interest, and personality characteristics. In the areas of becoming aware of academic majors, interpreting and evaluating aptitude and interest tests, discussing how personal-social factors have an effect on vocational choice, and discussing philosophy of life or values and their implications for vocational choice, the self-instruction approach was equally effective as the other two treatment groups. A partial replication of this study by Johnson and Graff (in press) revealed that the self-help group scores were significantly higher in four of the seven areas.

In an attempt to provide counseling for all incoming freshmen at the University of Illinois, Gilbert

and Ewing (1971) compared a programmed self-counseling manual with face-to-face counseling done by experienced college counselors. Results showed that although both groups were effective, students preferred face-to-face counseling. Programmed counseling provided a higher coverage of student problems, whereas face-to-face counseling was rated more flexible. Programmed counseling proved as effective as or more effective than face-to-face counseling in producing changes in the following areas: changes in estimates of ability and interest; estimates of suitability of abilities and interests for one's chosen field; and estimates of grade achievements to be expected in college. An end-of-the-term follow-up showed no changes in the original conclusions. The authors concluded:

> Effective learning or appropriate changes in important self-concepts of personal and emotional significance can be achieved without the presence of the personal relationship factors previously considered to be so important in face-to-face counseling [p. 421].

In summarizing the results of the use of programmed texts in vocational counseling, the theoretical question of Rogers' (1951) necessary and sufficient conditions for behavior change to occur has been examined. Investigations have shown that demonstrable changes can occur even though clients have not experienced the usual counselor-client relationship.

Personality Variables of Undecided Students

Several studies have attempted to identify possible personality variables that may differentiate vocationally undecided students from those who have made career choices. No differences were found in college freshmen in relation to college achievement, Strong Vocational Interest Blank (SVIB) scores, or background variables (Ashby, Wall, & Osipow, 1966). Also, no differences were found by Baird (1967), who examined ability, background variables, college goals, and high school nonacademic achievement. Testing whether vocational undecidedness is related to general undecidedness revealed no differences (Sharf, 1967).

Wachowiak (1973) investigated several personality correlates and concluded that people who made realistic choices tended to be more controlling, outgoing, and self-confident. However, Johnson and Graff (in press), when comparing programmed, group, and individual counseling with college women, found no interaction effect of inner- and other-directed individuals with treatments.

Wigent (1974) examined personality variables related to career decision-making abilities of community college students. He found that individuals with a higher self-concept and esteem are more likely to have decided on their career goal. He did not find, though,

any differences in relation to psychological needs, educational background of the parents, or academic achievement.

Brynes (1974) conducted a study at Lansing Community College, the same school used for the present research. He found that declared majors shared a more traditional view of college, viewed the instruction they received positively, earned higher G.P.A.'s, liked more liberal arts courses, and attended college for college-related reasons rather than personal ones.

Aiken and Johnson (1973) studied information-seeking behaviors of 94 freshmen and sophomore students. They found that those students who had a consistent vocational pattern on Holland's Vocational Preference Inventory (VPI) significantly produced more information-seeking responses. There were no differences between those students who were rated vocationally immature or mature on Crites' Attitude Test of Vocational Development Inventory (VDI).

Melhus, Hershenson, and Vermillion (1973) investigated the variable of readiness for counseling. Using computer-assisted and traditional counseling as treatments, they hypothesized that high-readiness, computer-counseled students would show more change in occupational plans than high-readiness, person-counseled students. Furthermore, low-readiness, person-counseled students would

show more changes than low-readiness, computer-counseled students. The results showed a significant main effect between high- and low-readiness subjects. Counselors were more effective than computers in working with low-readiness students.

Criterion Outcomes in Vocational Counseling

Considerable discussion has been generated concerning appropriate criterion measures to use in assessing vocational counseling. Hewer (1966) has argued that comparing choices with ultimate employment is a meaningful criterion. She found that counselor judgments about the realism of client career choices did not always agree with student judgments about the appropriateness of their current work and the decisions they had made some years earlier.

Myers (1971) has stated,

> To require of investigators that they invent and use criterion measures as flawless as those imagined by research critics would be to put an end to research on counseling outcomes. Despite the flaws contained in many of the studies completed to date, there is enough evidence to argue for continued investigation of the professional attempts to help clients make better decisions [p. 870].

Myers has classified criterion measures for vocational decision-making into three broad categories: (a) accuracy of self-knowledge, (b) appropriateness of vocational preference, and (c) acquisition of instrumental

behavior needed for effective decision-making. The appropriateness of vocational preference is a trait-factor approach and typically involves securing a post-counseling vocational preference from the client and evaluating its appropriateness with respect to the client's personal characteristics and specific requirements of the occupation that was chosen. Gonyea (1962) favored the use of appropriateness of vocational choice but noted that in follow-up periods, many subjects reversed their choices. Measuring instrumental behaviors is based on the assumption that selection of career choices requires the acquisition and eventual demonstration of particular behaviors. Studies by Ryan and Krumboltz (1964) and Meacci (1972) are good examples of this last category.

Summary

The review of literature provided ample evidence to suggest that techniques other than traditional counseling, such as the use of media, groups, computers, and programmed manuals, have proven at least somewhat effective in helping people choose careers. Additional evidence suggested that personality variables of clients might have a differential effect on the technique used. Research supported the notion that ultimately, various techniques for vocational counseling should be paired

with age, sex, race, and other personal correlates to test their relative effectiveness.

Overview

Chapter II includes a description on the subjects used, the experimental treatment groups, the measurement instructions, a detailed set of specific procedures, the hypotheses, the research design, and the statistical analysis procedures. Chapter III contains a report of the results of the data analysis. Chapter IV involves a summary of the study and implications for further research.

CHAPTER II

EXPERIMENTAL DESIGN AND METHODOLOGY

Subjects

Subjects for this research were drawn from students enrolled at Lansing Community College (L.C.C.). L.C.C. has been a community college since the late 1950's, is located in an urban setting about seven miles from Michigan State University, and when the research was conducted had an enrollment of slightly over 10,000 full- and part-time students.

Those students who indicated no preference for a particular curriculum area on their registration forms during Spring term, 1974 registration (coding of 100 on the computer registration card), served as the population. Only those subjects who volunteered for counseling in response to a written letter (Appendix A) suggesting that they receive assistance in making a vocational choice were included in the sample studied in this investigation.

There were 1,187 students who registered a 100 code at registration during Spring term, 1974. This

group contained 592 males and 595 females. From this total group, a random sample of 400 males and 400 females was drawn and sent a letter offering vocational counseling services. Sixty-eight subjects, 35 males and 33 females, volunteered for vocational counseling and were randomly assigned to the treatments groups. From this group of volunteers, 50 subjects completed the treatments.

Some questions may arise as to the differences between (a) subjects who did not volunteer, (b) subjects who volunteered and worked through the treatments to completion, and (c) subjects who volunteered but did not complete the assigned tasks. A random selection of those subjects who did not volunteer was taken to determine if any differences exist (on the characteristics selected) between those subjects who volunteered and those who did not. Large differences may lead one to conclude that the group who volunteered and completed treatments was unrepresentative of those students at L.C.C. who were undecided. A summarization of the personal and demographic data of each of these groups is given in Tables 1, 2, and 3. One can better determine from looking at these tables whether any apparent differences exist between the groups. The results suggest that the findings can legitimately be generalized to similar hypothetical samples of L.C.C. students who are vocationally undecided and volunteer for counseling.

Table 1

Personal and Demographic Characteristics of a Random Sample of People Who Were Sent Letters But Did Not Volunteer

Characteristic	Component Breakdown	Total
Sex (Frequency and Percentage)	Male 40 (50%)	Female 40 (50%)	80
Age (Frequency and Percentage)	18-20 30 (38%)	21-25 23 (29%)	26-30 11 (14%)	31-35 7 (9%)	36-40 2 (2%)	
	41-45 2 (2%)	46-50 1 (1%)	51-55 1 (1%)	56+ 3 (4%)		80
Major	Undecided (Code 100)					
G.P.A.	$\bar{X}$ = 2.77					
Marital Status (Frequency and Percentage)	Single 50 (63%)	Married 30 (37%)				80
Credits Earned Prior to Spring Term, 1974	$\bar{X}$ = 16.4					

Table 2

Personal and Demographic Characteristics of Subjects
Who Volunteered and Completed Treatments

Characteristic	Component Breakdown	Total
Sex (Frequency and Percentage)	Male 24 (48%)	Female 26 (52%)	50
Age (Frequency and Percentage)	18-20 14 (28%)	21-25 14 (28%)	26-30 7 (14%)	31-35 7 (14%)	36-40 2 (4%)	
	41-45 3 (6%)	46-50 2 (4%)	51-55 0	56+ 1 (2%)		50
Major	Undecided (Code 100)					
G.P.A.	$\bar{X}$ = 2.80					
Marital Status (Frequency and Percentage)	Single 31 (62%)	Married 19 (38%)				50
Credits Earned Prior to Spring Term, 1974	$\bar{X}$ = 20.5					

Table 3

Personal and Demographic Characteristics of Subjects Who Volunteered But Did Not Complete Treatments

Characteristic	Component Breakdown	Total
Sex (Frequency and Percentage)	Male: 11 (61%) Female: 7 (39%)	18
Age (Frequency and Percentage)	18-20: 7 (39%) 21-25: 4 (22%) 26-30: 3 (17%) 31-35: 3 (17%) 36-40: 0 41-45: 0 46-50: 1 (5%) 51-55: 0 56+: 0	18
Major	Undecided (Code 100)	
G.P.A.	$\bar{X}$ = 3.02	
Marital Status (Frequency and Percentage)	Single: 13 (72%) Married: 5 (28%)	18
Credits Earned Prior to Spring Term, 1974	$\bar{X}$ = 13.5	
Treatment Group Assigned	One-to-One Counseling: 2 (11%) Programmed Instruction: 9 (50%) Programmed Instruction plus Multimedia: 6 (33%) Control: 1 (6%)	18

Measures

Three types of dependent measures were used during the study. First, two covariates of age and self-control scores were used. Second, a set of 12 measurements was collected with a Self-Report Questionnaire that reflected the subjects' satisfaction with the vocational counseling received. Third, a recording was made of the curriculum preferences and codes registered by the subjects immediately after treatments and in a two-week follow-up.

Covariates

Age and self-control scores were used as covariates. Both measures were felt to be variables that had differential effects with the treatments employed. The age of the subject was the age recorded at the time of Spring term registration. The self-control score was taken from the seventh scale of Holland's (1965) Vocational Preference Inventory. The VPI is a personality and interest inventory that is used for research and counseling purposes. It can be administered in about 20 minutes and handscored in about 5 minutes. A summary sheet (Appendix B) provides graphic scores in the following areas: Realistic (Real), Intellectual (Int), Social (Soc), Conventional (Conv), Enterprising (Ent), and Artistic (Art). These represent six personality and environmental modes into which people

are classified for vocational counseling purposes. The VPI also measures five additional personality correlates--Self-Control (Co), Masculinity (Mf), Status (St), Infrequency (Inf), and Acquiescence (Ac). These, however, were not used in the study except for the Self-Control (Co) scale.

The scores on the Co scale ranged from 0-14 and a simple raw data count was used. The score represented the subject's degree of self-control. Scores in the high range of 11-14 indicate that a subject is too self-controlled, inhibited, and constricted in his activities. Middle range scores between 6 and 10 are thought to represent an average amount of self-control and to be associated with a happy spontaneity in living. Scores in the lower range of 0-5 represent subjects who are impulsive and "act out" their behavior extemporaneously.

Self-Report Questionnaire

The Self-Report Questionnaire (Appendix C) was adapted and modified from a questionnaire used in a study by Graff, Danish, and Austin (1972). It contained 12 questions relating to several aspects of vocational counseling. Subjects were asked to rate the help they received on a Likert-type scale with the following responses: 5 extremely helpful, 4 quite helpful, 3 somewhat helpful, 2 not helpful, and 1 worse than no help. Questions ranged from areas that related to

becoming aware of academic majors, interpretation of interest test results, investigation of values and personal factors, learning how to make vocational and educational decisions, and setting consistent and realistic goals. Subjects completed this questionnaire immediately upon completion of the treatments and again in a two-week follow-up. The follow-up was intended to test the treatment effects over time.

Curriculum Preference

At the bottom of the Self-Report Questionnaire, subjects were asked to respond to the following question:

> IF YOU WERE TO GO THROUGH REGISTRATION NOW, AND HAD TO INDICATE A CURRICULUM CODE OR CAREER AREA, WHAT CODE OR CURRICULUM AREA WOULD YOU CHOOSE?

This question was asked to measure the movement, if any, a subject made from the initial undecided preference to a more definite career area. With this measure, the direction or quality of the movement was not considered. A simple counting was made to determine whether the subject made a new career choice or decided to remain undecided at that time.

There were several additional measures that were collected as part of the treatment procedures. They included time to complete treatments and the quality of the career choices made. These measures will be explained later in the chapter.

Experimental Manipulations

Prior to the assignment of subjects to the treatment groups, several tasks were performed. A two-hour in-service training program (Appendix D) for the counselors at Lansing Community College was given for two purposes: (a) to familiarize the counselors with the use and interpretation of Holland's Vocational Preference Inventory, and (b) to solicit three volunteers to work with the subjects in one of the experimental treatment groups. The Director of the Counseling Center, six full-time counselors, a coordinator for tutoring, three practicum students, and one administrative assistant attended the training session. Two counselors who work with programs for minority students were not in attendance. Volunteers were accepted only from the six full-time counselors present. One female and two male caucasian counselors volunteered to participate in the project. All three counselors were experienced in the counseling field and averaged 11.7 years of experience in full-time counseling work.

The training consisted of a discussion of the theoretical aspects of Holland's VPI plus the strengths and weaknesses of the inventory. Each training participant was also administered the VPI at the beginning of the session. During the middle part of the training, the results were handscored by a secretary trained to

score the VPI. The final third of the session involved the interpretation of the VPI to all of the group members.

The second task performed prior to treatments was a 1-1/2 hour in-service training session with the four secretaries in the counseling department (Appendix E). Each secretary was given detailed instructions on all phases of the project that related to handling the flow of the subjects into and through each of the experimental treatments. Three student aides who worked in the department and assisted in the project in the absence of the secretaries were subsequently trained by the secretary who immediately supervised them. One of the four secretaries was designated the coordinator for the other staff members.

The final task before beginning the actual treatments was the creation of audiovisual materials used for one of the treatment groups. Audio information was given on cassette tape and included short segments (5-10 minutes each) on the following areas: decision-making (Appendix F), using the Occupational Library (Appendix G), and the world of work (Appendix H). In addition, in conjunction with several technicians from the Media Department at L.C.C., an audiovisual color slide presentation was produced depicting various aspects of career planning (Appendix I).

Selection and Assignment of Subjects

A computer print-out from the Computer Department of Lansing Community College was made after Spring term, 1974 registration. It listed those subjects who had placed a 100 code number on their registration forms indicating no preference or no academic major. From this list of 1,187 students, a random sample of 800 was selected and letters were sent asking for participation in the project. The subjects were instructed to either call or go in person to one of three counseling centers located at L.C.C. If a person called, the secretary recorded the subject's name, address, and phone number. The subject was then given the instruction that he/she should come in to any of the three counseling offices in the next two to three days to begin the project by taking an interest inventory. Mention was also made that no appointment was necessary and that the inventory would take approximately 15-20 minutes.

Once a subject arrived at the counseling center, a check was made to see if he/she had called earlier. If not, the secretary recorded the subject's name, address, and phone number and added it to her list of phone callers. After the initial information was collected, the secretary gave each subject one copy of the VPI and one answer sheet. The instructions on the VPI

were self-explanatory and were a part of the inventory's directions. The person took the interest inventory in a place at the counseling center where he/she was not interrupted for approximately 20 minutes. The VPI was untimed, and the person worked at his/her own pace.

While the subject was taking the VPI, the secretary called the coordinator. She told the coordinator the name and sex of the subject, and the coordinator made a random assignment to one of the three experimental groups and the control group. The coordinator had a master control sheet which was divided by groups and by sex. The first male that took the VPI was assigned to group 1 and the second male to group 2. The first female was assigned to group 1 and so on. Each secretary had instructions with her for the four different groups. After making the assignment, the coordinator told the secretary to hand out instructions #1 (Appendix J), #2 (Appendix K), #3 (Appendix L), or #4 (Appendix M). Subjects assigned to group 1, which involved traditional one-to-one counseling, were also given a counselor's name and a time and place to talk to the counselor. The coordinator had access to the counselors' schedules and made assignments to fit their availability. This was done to disrupt as little as possible the daily work routines of the counselors. If the time was not suitable for the subject, a call back to the coordinator was made

by the secretary, and a more mutually acceptable time for both the counselor and the subject was established.

Subjects assigned to groups 2 and 3, the programmed instruction groups, were given instructions that directed them to Room 207, Olds Central, one of the counseling centers. They were to go there at their own convenience within the next two weeks between 8:00-12:00 and 1:00-5:00 Monday through Friday.

Group 4, the control group, was given instructions that they would be contacted in two weeks to discuss the VPI results and to participate in additional career planning activities.

At the end of each day during this phase of the research, the VPI results were scored and graphed by the researcher. The following day, the VPI profiles were distributed to the appropriate places where the subjects would be completing the different treatments.

Treatment Groups

The groups consisted of three treatments plus a control group: (a) traditional or one-to-one counseling, (b) programmed self-help, (c) programmed self-help plus multimedia, and (d) control.

Traditional or one-to-one counseling.--Prior to seeing the subjects, the three counselors who volunteered were individually seen by this researcher and were given

instructions (Appendix N). Each counselor (one was located in each counseling center) met with the subject in his/her own office and participated in career planning. They conducted the counseling sessions as they would with any person seeking career help. Interviews typically followed the general manner of test interpretation, discussion of abilities and career correlates, and finally, initial steps either to gather more information or to make plans for implementing a tentative career decision into course and curriculum requirements. One exception to this procedure was the interpretation of the VPI, which they had never done before. The VPI results were available to the counselors prior to the initial meeting session with each subject. The counselors recorded each of the interviews on cassette tape and made a record of the length of the entire time spent with each subject.

After the initial interview, if more sessions were needed, the counselors made arrangements for additional meeting times. All the counseling sessions were conducted within a two-week period from the time of the first interview. The interviews ranged from one to three sessions. At the end of the final interview for each subject, the counselors directed the person to the secretary who had him/her fill out the Self-Report Questionnaire. The counselors at no time knew what was contained in the questionnaire.

Programmed self-help.--After the subjects in this group had taken the VPI, they were instructed to go to Room 207, Olds Central at any time within the next two weeks. When they arrived at the counseling center, a secretary handed them a folder with their name on the front that included the following:

1. Directions (Appendix O);
2. Self Help Career Guidance Program (Graff, 1973);
3. The Vocational Preference Inventory Profile;
4. Summary of the Vocational Preference Inventory (Appendix P).

The directions gave the subjects a step-by-step procedure to follow. The Self Help Career Guidance Program was a programmed booklet originally designed for career planning with high school seniors. It has been used, though, quite successfully with college students in the past. Slight modifications were made in the booklet for easier use by the subjects. The programmed text provided reading material and stimulus questions to which the subjects responded. It gave them opportunities to explore things about themselves and about several jobs. The subjects wrote directly in the manual and were allowed to keep the manual after it was completed.

As the subjects progressed through the programmed manual, they reached a midway point where they looked at

their VPI results. At this time, they took out their VPI profile and the summary of the VPI. The summary sheet explained the VPI and helped them interpret their own results. It included what to look for, what the profile indicated about their vocational interests, and what possible steps to follow in relation to the outcome and shape of the profile.

All the work done by subjects in this treatment group took place in the library located a short distance from the counseling center. One exception to this occurred when the subjects reached the place in the manual which involved collecting information about jobs. They were encouraged to go to the Occupational Library and collect any information they needed.

The subjects were instructed to work alone at their own pace and to work no more than an hour at a time. This was done to eliminate fatigue as a possible intervening variable and to simulate as closely as possible the amount of time typically spent during a counselor-client interview. At the end of the hour, if they had not finished the manual, they were instructed to return all materials to the folder and return it to the secretary. The secretary had earlier marked the time the subjects checked out their folder and simply recorded again the time the subjects returned their folder. This procedure was repeated until the subjects completed the booklet.

The final step of the directions instructed the subjects to complete the Self-Report Questionnaire. The secretary placed the questionnaire back into the folder and thanked the subjects for their participation.

Programmed self-help plus multimedia.--Subjects in this group followed essentially the same procedure as the programmed self-help group. However, several additional tasks were performed (Appendix Q). After the secretary gave the subjects their folders, they were directed to a cubicle located in a corner of the counseling center. The cubicle was surrounded by partitions to allow for more privacy. It was designed to allow one subject to work at a time. Inside, the subjects found a Caramate Video Recorder which was used to show slides, a cassette tape recorder, and three tapes labeled A, B, and C. There was ample room for the subjects to read their materials and to do any necessary writing.

Headphones were connected to the video recorder and the subjects were given the instructions to press the start button and begin viewing the video presentation. There were 76 slides which depicted several aspects of career planning--self-exploration, job exploration, and decision-making. The last third of the presentation involved a model of a student progressing through the three phases of career exploration.

After viewing the slides, the subjects began working through the Self Help Career Guidance Program. At three separate places, the subjects were given instructions to place tape A (decision-making), tape B (using the Occupational Library), and tape C (the world of work) into the cassette recorder. Each tape involved a 5-10 minute description on each topic and served to supplement the information previously read in the programmed booklet. The subjects also interpreted their own VPI in the same manner as the programmed self-help group.

The subjects worked alone and at their own pace. The required time to complete the activities was maintained by the secretary. At the end of the program, the subjects filled out the Self-Report Questionnaire.

One additional procedure was followed for the three experimental groups. In the traditional one-to-one counseling group, the secretary made it a point to contact the subject and reschedule an appointment if he/she missed a session. This was done in an attempt to have as many subjects as possible complete the treatment. Likewise, in the two programmed instruction groups, at the beginning and middle of the second week of treatments, phone calls were made to all those subjects who had never reported to Room 207, Olds Central after taking the VPI or who had reported only once. This served as a reminder

about the two-week deadline for the study and as an encouragement to receive assistance during this period.

Control.--The control group was given instructions after taking the VPI that they would be contacted after two weeks. At that time, a postcard was sent asking them to participate in a group career planning session. This was done to ethically provide vocational planning for everyone who volunteered for the project. Only five of the 15 control group subjects came to the sessions. For those who did, before any assistance was given, they completed the Self-Report Questionnaire. The remainder of the control group was either sent a Self-Report Questionnaire through the mail and asked to return it or was given it in person during one of their classes. Questionnaires were mailed only when the subjects could not be reached in class.

Follow-Up

Two weeks after the treatments were completed, a follow-up was conducted. Letters were sent (Appendix R) along with the Self-Report Questionnaire plus a self-addressed envelope to all of the subjects who completed the experimental treatments. Those who did not reply by the deadline date were individually contacted in one of their classes. This procedure proved time-consuming as many subjects failed to either return the questionnaire

or to be at their scheduled class. Several attempts were made to visit the classes in order to secure as many follow-up questionnaires as possible. Visits were also made to the homes of four of the subjects. Of the 35 subjects in the three experimental groups, follow-up questionnaires were secured from 23.

Hypotheses

Five main hypotheses were tested in this experiment. Several of the hypotheses reflect particularly the findings reported in the studies by Graff, Danish, and Austin (1972), Johnson and Graff (in print), and Gilbert and Ewing (1971). As cited earlier, each of the studies provided evidence that a programmed approach to vocational counseling has proven effective in helping people choose careers.

Hypothesis One

In a population of volunteer community college students at Lansing Community College who have indicated vocational undecidedness, there will be differences in the amount of effective vocational changes between (a) groups who receive traditional one-to-one counseling (TC), (b) groups using a programmed self-instruction manual (PI), and (c) groups using a programmed self-instruction manual accompanied with multimedia materials (PI+MM). It is expected that the PI+MM

group will produce the most changes from a code of 100 (undecided) to a more definite curriculum area.

Hypothesis Two

In a population of volunteer community college students at Lansing Community College who have indicated vocational undecidedness, there will be differences in the amount of satisfaction with career help given by groups receiving traditional counseling (TC) and groups using the programmed procedures (PI and PI+MM). It is expected that the programmed instruction groups will be more satisfied with the assistance given to them as measured by the Self-Report Questionnaire.

Hypothesis Three

In a population of volunteer community college students at Lansing Community College who have indicated vocational undecidedness, the programmed instruction groups will produce more efficient $\left(\frac{\text{changes}}{\text{time}}\right)$ outcomes than the traditional counseling group.

Hypothesis Four

In a population of volunteer community college students at Lansing Community College who have indicated vocational undecidedness, there will be a sex by group interaction effect. It is expected that females in the programmed instruction groups will make more changes to a definite career area than males.

Hypothesis Five

In a population of volunteer community college students at Lansing Community College who have indicated vocational undecidedness, there will be no differences in a two-week follow-up in the amount of effective changes and in the amount of satisfaction with vocational assistance between groups receiving traditional counseling and groups using the programmed manuals.

Experimental Design

To test the hypotheses given above, a 4 x 2 fixed factorial design with repeated measures was employed for this study and is shown in Table 4. The use of sex as an independent variable was included because of the predicted differential effects it would have with the treatment groups. Using Campbell and Stanley (1963) notation, the design is as follows:

R X_1 O_1 O_5	X_1 = One-to-One Counseling
R X_2 O_2 O_6	X_2 = Programmed Self-Help
R X_3 O_3 O_7	X_3 = Programmed Self-Help Plus Multimedia
R X_4 O_4	X_4 = Control
	R = Randomization
	O = Measurement on Dependent Variable

In order to increase precision in this design, two covariates--age and self-control--were included. Both were felt to be highly correlated with the criterion

Table 4

Experimental Design
N = 50

Treatments		Repeated Measures	
		M_1	M_2
One-to-One Counseling	M	7	4
	F	8	5
Programmed Instruction	M	5	2
	F	4	2
Programmed Instruction plus Multimedia	M	5	5
	F	6	4
Control	M	7	-
	F	8	-

Covariate Measures: 1. Age
2. Self-control

variables. The randomization of subjects to treatment groups also served to increase precision.

There was a total of 50 subjects in the study, and each was randomly assigned to the four treatment conditions. The main dependent measures were changes made, if any, from the initial undecided status to a specific career area and the satisfaction with 12 variables related to career counseling as reported by the Self-Report Questionnaire.

Analysis

Two approaches were used to analyze the data. First, a multivariate analysis of covariance (MANCOVA) was used with the 12 measures on the satisfaction scale and the two covariates (see Table 4). The other dependent measures were analyzed with a univariate analysis of covariance (ANCOVA). The Finn Multivariate Analysis of Variance program (Finn, 1968) was employed to analyze the data. Secondly, the Glendening (1973) POSTHOC Fortran IV program was used to generate confidence intervals for the Scheffé multiple comparison procedures. Other remaining data used in the study were analyzed in a descriptive manner.

CHAPTER III

ANALYSIS OF RESULTS

The analysis of the data obtained in this study was performed on the Control Data Corporation 6500 computer system in the Computer Center at Michigan State University. The level of significance for all tests involving the major hypotheses was .05.

Chapter III provides a statistical analysis of the data that were collected. The analyses that were relevant to the main hypotheses are presented first. Then, subsidiary and descriptive analyses of several additional dependent measures will follow.

Primary Analyses

The initial step when using any analysis of covariance procedure is to determine the relationship between the covariates and the dependent measures. The multiple correlation of the covariates of age and self-control with the dependent measures is shown in Table 5. The F-value for no association between the dependent variables and the covariates was not significant for any of the measures.

Table 5

Regression Analysis Portion of the Design: The Relationship Between the 16 Dependent Variables and the 2 Covariates (Age and Self-Control)

Dependent Variable	Multiple Correlation With 2 Covariates	F	P <
Question 1	.2263	.9173	.4093
Question 2	.2150	.8238	.4474
Question 3	.3475	2.3354[a]	.1122
Question 4	.4118	3.2677	.0512
Question 5	.3935	2.9315	.0678
Question 6	.1102	.1967	.8225
Question 7	.2673	1.2311	.3055
Question 8	.2267	.8665[b]	.4301
Question 9	.3757	2.7114	.0813
Question 10	.1717	.5013	.6103
Question 11	.2675	1.2718	.2938
Question 12	.3290	2.0032[c]	.1510
Total Questionnaire	.2546	1.1782[d]	.3202
Movement	.2758	1.6470[e]	.2055
Time	.2054	.5949[f]	.5588
Movement/Time	.3611	2.0241[g]	.1517

[a]For questions 1, 2, and 3, D.F. for hypothesis = 2, D.F. for error = 34. F value for test of hypothesis of no association between dependent variables and the covariates = 1.896 D.F. = 6,64 P < .0951

[b]For questions 4, 5, 6, 7, and 8, D.F. for hypothesis = 2, D.F. for error = 32. F value for test of hypothesis of no association between dependent variables and the covariates = .9684 D.F. = 10,56 P < .4808

[c]For questions 9, 10, 11, and 12, D.F. for hypothesis = 2, D.F. for error = 33. F value for test of hypothesis of no association between dependent variables and the covariates = 1.1894 D.F. = 8,60 P < .3207

[d]For Total Questionnaire, D.F. for hypothesis = 2, D.F. for error = 34.

[e]For Movement, D.F. for hypothesis = 2, D.F. for error = 40.

[f]For Time, D.F. for hypothesis = 2, D.F. for error = 27.

[g]For Movement/Time, D.F. for hypothesis = 2, D.F. for error = 27.

A closer examination of the effects of each of the covariates was found in the stepwise regression analysis. This analysis examined the contribution of each of the covariates separately. Table 6 shows that although neither of the covariates was significant for any of the measures, the use of age was found to contribute more to the prediction of the dependent variables than self-control.

Before considering the analysis of the data relevant to the hypotheses, each of the hypotheses will be stated in summary form.

Hypothesis One:

There will be differences in the amount of effective vocational changes between (a) groups who receive traditional one-to-one counseling (TC), (b) groups using a programmed self-instruction manual (PI), and (c) groups using a programmed self-instruction manual accompanied with multimedia materials (PI+MM). It is expected that the PI+MM group will produce the most changes from a code of 100 (undecided) to a more specific career area.

Hypothesis Two:

There will be differences in the amount of satisfaction with career help given by groups receiving traditional counseling and groups using the programmed procedures. It is expected that the programmed instruction groups will be more satisfied with the assistance given to them as measured by the Self-Report Questionnaire.

Table 6

Step-Wise Regression of the Contribution of Each of the Covariates

Dependent Measures	Age		Self-Control	
	F	P <	F	P <
Question 1	3.21	.082	1.37	.249
Question 2	1.65	.208	.01	.967
Question 3	.13	.726	1.75	.194
Question 4	.31	.579	6.35	.017
Question 5	.21	.651	5.79	.022
Question 6	.27	.608	.13	.723
Question 7	2.39	.131	.06	.804
Question 8	1.27	.268	.46	.504
Question 9	4.47	.042	.86	.359
Question 10	.63	.434	.38	.542
Question 11	.99	.326	3.01	.092
Question 12	1.40	.245	1.12	.296
Total Questionnaire	1.06	.309	1.29	.264
Movement	3.13	.084	.16	.695
Time	1.04	.317	.15	.701
Movement/Time	3.69	.065	.33	.571

Hypothesis Three:

The programmed instruction groups will produce more efficient ($\frac{\text{Changes}}{\text{Time}}$) outcomes than the traditional counseling group.

Hypothesis Four:

There will be an interaction between sex and treatments. It is expected that females in the programmed instruction groups will make more changes to a definite career area than males.

Hypothesis Five:

There will be no differences in a two-week follow-up in the amount of effective changes and in the amount of satisfaction with vocational assistance between groups receiving traditional counseling and groups using the programmed manuals.

Tests for Hypothesis One

The results for Hypothesis One are found in Table 7. The F-value for differences between groups was significant ($p < .0055$). Therefore, Hypothesis One, which predicted differences among groups, was supported. Table 8 and Figure 1 examine the group differences more closely. All three treatment groups provided more movement (changes from undecided to a specific career area) than the control group. The programmed instruction plus multimedia group (PI+MM) provided the most movement ($\bar{X} = .9091$), followed by the one-to-one traditional counseling group (TC) ($\bar{X} = .6000$), and the programmed instruction group (PI) ($\bar{X} = .5556$). Male subjects made

Table 7

Summary of the Univariate Analysis of Covariance on the Changes[a] Made of Subjects After Treatment

ANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[b]					
Source	d.f.	SS	MS	F	P <
Sex (S)	1	.0041	.0041	.0205	.8870
Groups (G)	3	2.9346	.9782	4.9001	.0055
S x G	3	.3858	.1286	.6444	.5911
Error	40	7.8840	.1996		

[a]This is defined as changes made, if any, from an undecided curriculum preference to a specific career area.

[b]Covariates employed were age and self-control.

Table 8

Means and Pooled Standard Deviations of Changes Made After Completion of Treatments

Group		Grand Mean	Sex	
			Male	Female
One-to-One Counseling	$\bar{X}$	.6000	.5714	.6250
	S.D.	.525	.534	.517
Programmed Instruction	$\bar{X}$	.5556	.4000	.7500
	S.D.	.527	.548	.500
Programmed Instruction plus Multimedia	$\bar{X}$	.9091	.8000	1.000
	S.D.	.203	.447	.000
Control	$\bar{X}$	.2000	.2857	.1250
	S.D.	.436	.488	.354

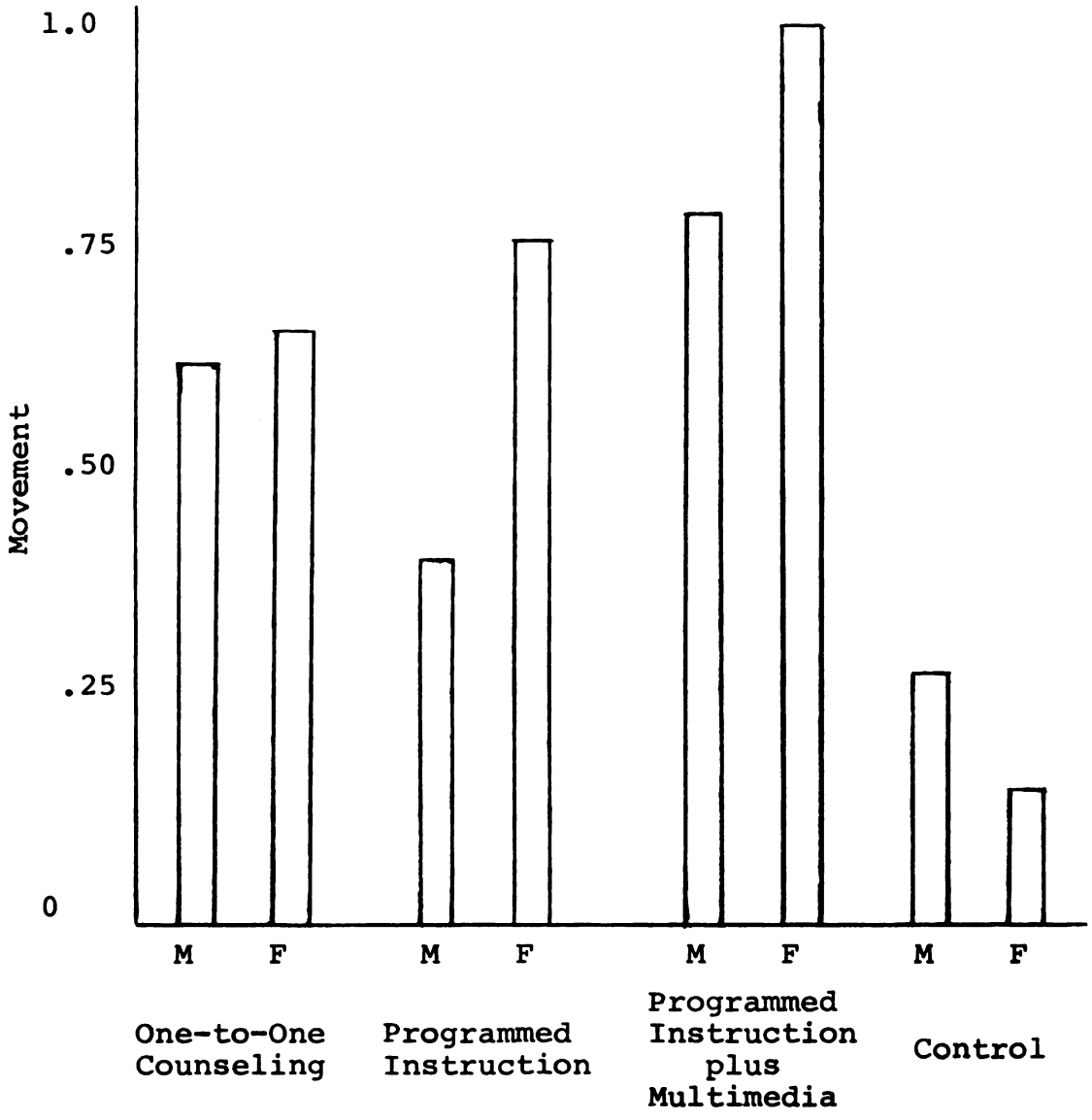

Fig. 1. Graphical presentation of mean amount of changes made after treatment

the most changes in the PI+MM group and the second most changes in the TC group. Females demonstrated greater movement in both programmed instruction groups in comparison to the one-to-one counseling group.

A Scheffé (1959) post hoc test was used to test the significance of the differences found. Five simple and complex contrasts are shown in Table 9. It appeared that these five contrasts dealt closely with the major purpose of this research. There was a significant difference between the three treatment groups and the control group in movement made. Although there were differences in the other contrasts, none were significant at the .05 level.

To summarize, Hypothesis One, which predicted differences among groups, was supported by the data. Differences were in the direction predicted. However, the post hoc contrasts did not produce differences that were significant, except for the three treatment groups versus the control group contrast.

Tests for Hypothesis Two

It was necessary when analyzing the results pertinent to Hypothesis Two to make some minor adjustments. Six of the 50 subjects failed to answer all 12 questions on the Self-Report Questionnaire. There was no particular pattern as to which questions were omitted.

Table 9

Scheffé Post Hoc Comparisons for Total Score on Questionnaire, Changes, and Time to Complete Treatments

Dependent Measures	Contrast				
	TC vs PI	TC vs PI+MM	TC vs PI PI+MM	PI vs PI+MM	TC, PI PI+MM vs C
Changes	-.537[a] .578	-.848 .191	-.120 .059	-.946 .248	.107* 2.582
Total Score on Questionnaire	-6.992 12.362	-10.907 7.331	-1.466 1.645	-15.041 6.095	28.063* 72.285
Time	-57.890 173.164	-19.583 202.110	-3.883 33.663	-92.963 160.217	

Note: TC = Traditional Counseling, PI = Programmed Instruction, PI+MM = Programmed Instruction Plus Multimedia, C = Control.

[a]The two sets of numbers represent the upper and lower limits of a .95 confidence interval around the population parameter.

*P < .05

Three of the subjects came from the one-to-one counseling group, and one each came from the programmed instruction, programmed instruction plus multimedia, and control groups, respectively. There was no reason to believe that these six subjects purposefully omitted the questions or that they differed in any way from the 44 subjects who did complete the entire questionnaire.

Because of the missing data which resulted in a smaller cell size and a loss of degrees of freedom, the analysis of the Self-Report Questionnaire was approached two ways. First, a multivariate analysis of covariance was employed using the 12 questions as separate dependent measures. Since the questionnaire was created for this study, there was no evidence to suggest that the 12 questions were highly correlated with one another or with the total score. The questionnaire appeared to measure various aspects of vocational counseling, and thus, a MANCOVA was used considering each question as one dependent variable. Because of the missing data, the questionnaire, for purposes of analysis, was grouped into three categories: (a) questions 1-3, (b) questions 4-8, and (c) questions 9-12. This was done arbitrarily, although each grouping was felt to cover somewhat similar information. Instead of eliminating subjects entirely if they omitted one or two of the questions, the analysis was performed using subjects who responded to all of the

questions in each of the groupings. This increased the cell size and reduced the loss of degrees of freedom.

It can be argued that using different subjects for each of the groupings resulted in three separate samples. However, each grouping had the same basic group of 44 subjects with one or two subjects varying for each. It can also be argued that using each of the questions as one dependent measure greatly reduced the reliability of the questionnaire. This argument is true, but if differences can still be found with the reduced reliability involved, the significance of the findings would be even greater.

After examining the correlations between several of the questions, it appeared that there might be a positive relationship among all of the questions. Thus, a total score for the questionnaire was calculated which reflected the overall satisfaction subjects had with the vocational assistance received. To test the significance of this general satisfaction, the Self-Report Questionnaire was analyzed from a second approach employing a univariate analysis of covariance.

Hypothesis Two, then, was tested using both a MANCOVA with the 12 ratings on the Self-Report Questionnaire analyzed in three groupings and an ANCOVA with an overall rating on the Self-Report Questionnaire as the dependent variable. The results of the MANCOVA on

questions 1-3, questions 4-8, and questions 9-12 are found in Tables 10, 11, and 12. Despite the reduced reliability of the instrument with this analysis, significant differences for groups were found each time at $p < .0021$, .0002, and .0023.

The results of the ANCOVA for the total score in Table 13 indicate a treatment main effect at a significance level less than .0001. Thus, Hypothesis Two was supported as differences were found among groups in relation to the amount of satisfaction with the vocational counseling received.

Closer examination of these differences is found in Table 14 and graphically in Figure 2. The programmed instruction plus multimedia group produced the highest mean score for the entire questionnaire ($\overline{X} = 4.133$). The one-to-one counseling produced the next highest amount of satisfaction ($\overline{X} = 3.923$), followed by the programmed instruction group ($\overline{X} = 3.680$), and the control group ($\overline{X} = 2.593$). Eight of the 12 questions were rated the highest in the PI+MM group. Thus, subjects in this group were most satisfied with the help received in the following areas: becoming aware of academic majors, becoming informed of vocational opportunities, securing information about jobs, learning how personal-social factors affect vocational choice, learning how to make vocational decisions, and setting goals consistent with measured abilities, interests, and personality.

Table 10

Summary of the Multivariate Analysis of Covariance on Questions 1, 2, and 3 of the Self-Report Questionnaire

MANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[a]

Source	Multivariate d.f.	Multivariate F	P <
Sex (S)	3,32	.4314	.7320
Groups (G)	9,78.03	3.2573	.0021
S x G	9,78.03	.3817	.9406

Note: F value for test of hypothesis of no association between dependent variables and the covariates = 1.8960 D.F. = 6,64 P < .0951

[a]Covariates employed were age and self-control.

Table 11

Summary of the Multivariate Analysis of Covariance on Questions 4, 5, 6, 7, and 8 of the Self-Report Questionnaire

MANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[a]			
Source	Multivariate d.f.	Multivariate F	P <
Sex (S)	5,28	1.0718	.3970
Groups (G)	15,77.697	3.4844	.0002
S x G	15,77.697	.9303	.5351

Note: F value for test of hypothesis of no association between dependent variables and the covariates = .9684 D.F. = 10.56 P < .4808

[a]Covariates employed were age and self-control.

Table 12

Summary of the Multivariate Analysis of Covariance on Questions 9, 10, 11, and 12 of the Self-Report Questionnaire

MANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[a]			
Source	Multivariate d.f.	Multivariate F	P <
Sex (S)	4,30	1.3547	.2730
Groups (G)	12,79.664	2.9079	.0023
S x G	12,79.664	1.4267	.1714

Note: F value for test of hypothesis of no association between dependent variables and the covariates = 1.1894 D.F. = 8.60 P < .3207

[a]Covariates employed were age and self-control.

Table 13

Summary of the Univariate Analysis of Covariance on the Self-Report Questionnaire

ANCOVA (2 levels of sex X 4 levels of groups with 2 covariates[a] and 1 dependent variable)

Source	d.f.	SS	MS	F	P
Sex (S)	1	12.163	12.163	.2039	.6545
Groups (G)	3	2603.364	867.788	14.5490	.0001
S x G	3	52.698	17.566	.2945	.8291
Error	34	2027.862	59.643		

[a]Covariates employed were age and self-control.

Table 14

Means and Pooled Standard Deviations of Ratings on the Self-Report Questionnaire for the Treatment Groups

Group		Grand Mean	Questions											
			1	2	3	4	5	6	7	8	9	10	11	12
One-To-One Counseling	$\bar{X}$	3.92	3.50	3.83	3.83	4.33	4.33	3.83	3.92	4.08	3.58	3.67	4.17	4.08
	S.D.	.76	.67	.86	.87	.65	.65	.82	1.04	.79	.65	.85	.57	.69
Programmed Instruction	$\bar{X}$	3.68	3.00	3.63	3.75	4.00	3.75	3.86	3.38	3.38	3.67	4.22	3.67	3.78
	S.D.	.95	1.33	.89	.87	.58	.73	.77	1.35	.98	.71	1.60	.90	.75
Programmed Instruction Plus Multimedia	$\bar{X}$	4.13	3.80	4.40	4.40	3.80	4.00	4.50	3.90	4.40	4.00	4.00	4.20	4.30
	S.D.	.72	.77	.69	.87	.93	.55	.72	.58	.89	.64	.64	.63	.77
Control	$\bar{X}$	2.59	2.57	2.64	2.43	2.50	2.50	2.50	2.92	2.92	2.50	2.50	2.58	2.58
	S.D.	.97	.93	1.17	.87	.89	1.03	1.03	1.13	1.07	.96	.78	.79	.94

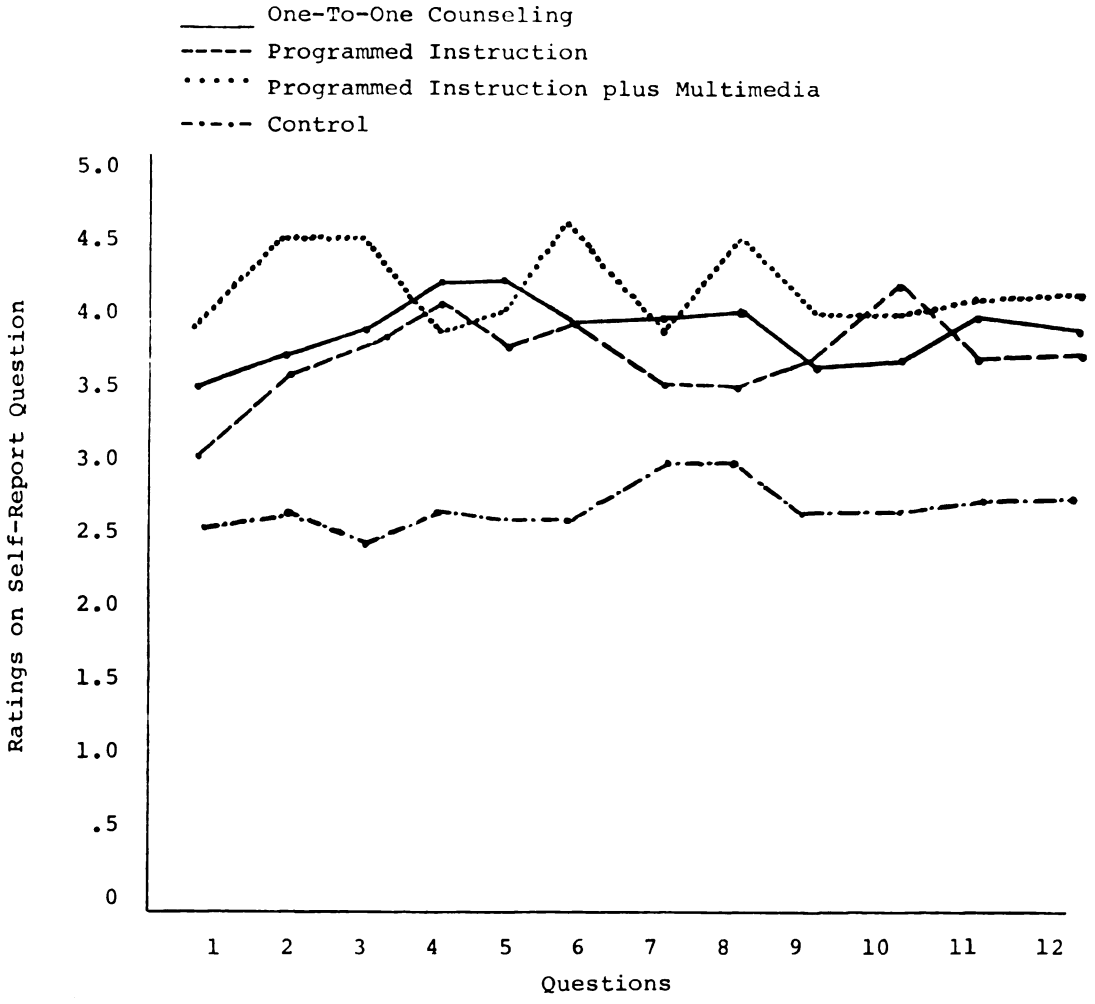

Fig. 2. Graphical presentation of mean number of ratings for each treatment group.

Differences in males and females who rated the amount of help received, although not significant, are shown in Table 15 and graphically in Figure 3. Females were more satisfied with the help received ($\overline{X}$ = 3.678) than males ($\overline{X}$ = 3.405). Nine of the 12 questions were rated higher by females.

Examining the significance found in the group main effects with first, the 12 questions separately, and second, the amount of overall satisfaction from vocational counseling, a Scheffé post hoc test was administered with the five contrasts. Results from Table 16 show that nine of the 12 questions were significantly different for the three treatment groups in comparison to the control group. None of the other contrasted differences were significant at a confidence interval set at .95. Referring back to Table 9, the post hoc comparisons for the total score on the questionnaire were, again, significantly different only for the contrast between the three experimental groups versus the control group.

To summarize, Hypothesis Two, which predicted differences among groups, was supported by the data. The PI+MM group was most satisfied with the assistance given. However, the post hoc contrasts did not produce differences that were significant, except for the contrast between the three treatment groups versus the control group.

Table 15

Means and Pooled Standard Deviations of Ratings on the Self-Report Questionnaire for Males and Females

Sex		Grand Mean	Questions											
			1	2	3	4	5	6	7	8	9	10	11	12
Male	$\bar{X}$	3.405	3.23	3.50	3.55	3.38	3.33	3.38	3.33	3.52	3.32	3.55	3.41	3.36
	S.D.	.863	.91	.99	.92	.61	.77	.98	.92	.84	.63	1.17	.78	.82
Female	$\bar{X}$	3.678	3.14	3.59	3.46	3.86	3.91	3.86	3.71	3.86	3.48	3.52	3.86	3.95
	S.D.	.831	.88	.86	.82	.93	.73	.71	1.11	1.02	.78	.72	.64	.70

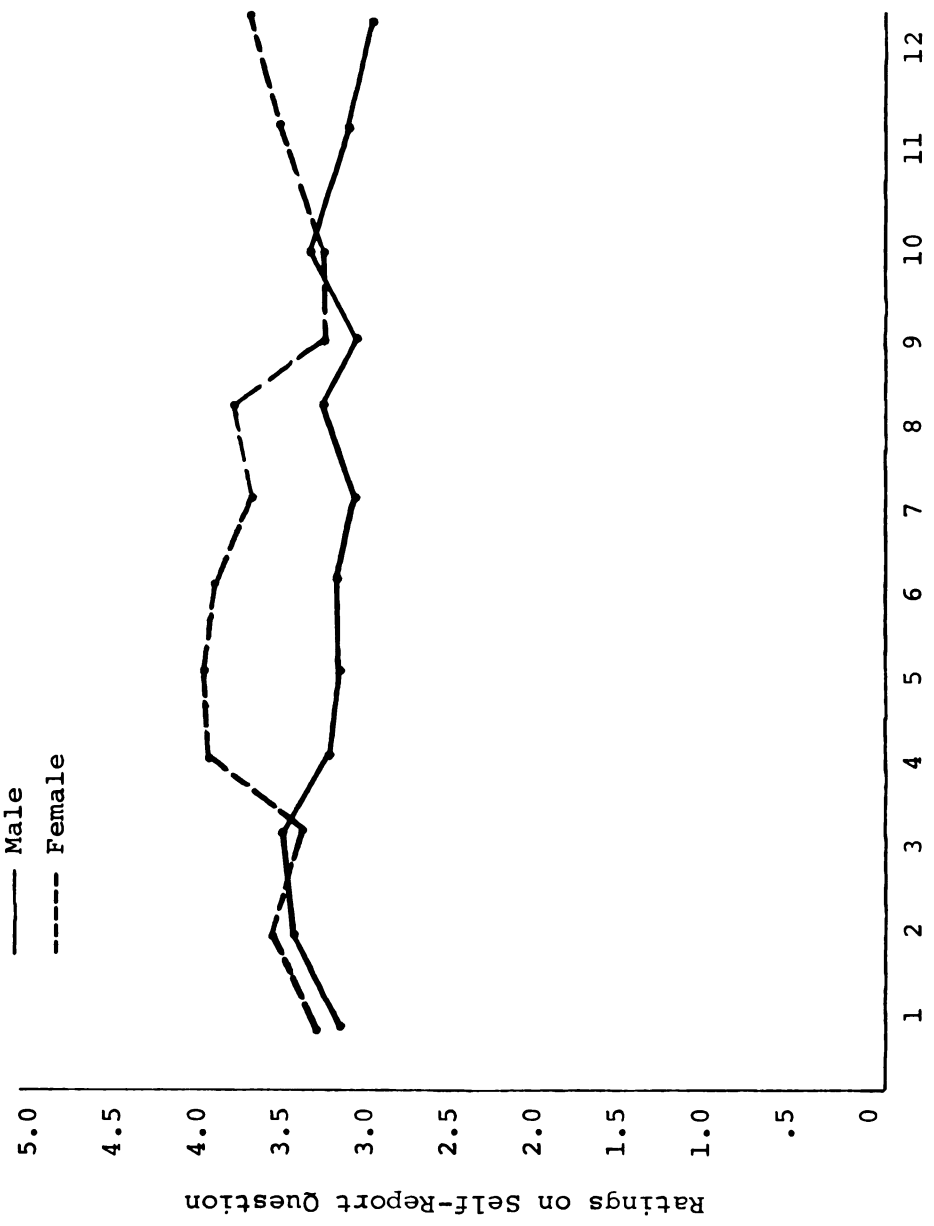

Fig. 3. Graphical presentation of mean number of ratings for males and females.

Table 16

Scheffé Post Hoc Comparisons for Each Individual Question of the Self-Report Questionnaire

Question	Contrast				
	TC vs PI	TC vs PI+MM	TC vs PI PI+MM	PI vs PI+MM	TC, PI PI+MM vs C
1	-.825[a]	-1.406	-.179	-2.013	-.260
	1.731	.886	.218	.587	5.088
2	-1.093	-1.804	-.248	-2.196	.129
	1.545	.656	.179	.596	7.243*
3	-1.184	-1.631	-.244	-1.792	2.187
	1.207	.601	.143	.739	7.394*
4	-.809	-.379	-.086	-.742	2.107
	1.296	1.602	.257	1.479	7.019*
5	-.512	-.546	-.074	-1.163	2.172
	1.514	1.361	.256	.975	6.900*
6	-1.304	-1.838	-.275	-1.919	1.670
	1.188	.507	.131	.707	7.485*
7	-.899	-1.358	-.182	-2.046	-1.334
	1.951	1.324	.283	.960	5.294
8	-.609	-1.528	-.174	-2.350	-.189
	1.962	.893	.246	.363	5.812
9	-.979	-1.245	-.195	-1.257	1.351
	.852	.539	.111	.679	5.648*
10	-2.084	-1.771	-.340	-1.339	.629
	.985	1.237	.175	1.924	7.875*
11	-.504	-.947	-.114	-1.528	1.800
	1.499	1.004	.219	.589	6.499*
12	-.765	-1.143	-.159	-1.507	1.877
	1.322	.889	.189	.697	6.771*

Note: TC = Traditional Counseling, PI = Programmed Instruction, PI+MM = Programmed Instruction Plus Multimedia, C = Control

[a]The two sets of numbers represent the upper and lower limits of a .95 confidence interval around the population parameter.

*$P < .05$

Tests for Hypothesis Three

The results for Hypothesis Three are found in Table 17. The hypothesis was not supported as no significant differences were found in relation to the efficiency $\left(\frac{\text{Changes}}{\text{Time}}\right)$ of each of the treatments ($p < .2898$). Efficiency was defined as changes made, if any, from an undecided curriculum preference to a more specific career area in relation to the time required to complete treatments.

Tests for Hypothesis Four

Hypothesis Four was also not supported. Results from Table 7 indicate that there was no interaction between sex and the treatments. The F-value of .6444 with $p < .5911$ did not produce significant results. Although not significant, which means the results could be reversed if the study was repeated, Table 8 reveals a trend in the direction predicted. It was predicted that females in the programmed instruction groups would make more changes to a definite career area than males. All six of the females in the PI+MM group moved to a specific career area, whereas four out of the five males (80%) in that group changed preferences. In the PI group, three out of four females (75%) indicated a new career area in comparison to two out of five males (40%).

Table 17

Summary of the Univariate Analysis of Covariance on Efficiency $\frac{(\text{Changes})}{(\text{Time})}$[a] of Treatments

ANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[b]

Source	d.f.	SS	MS	F	P <
Sex (S)	1	.0000	.0000	.1713	.6823
Groups (G)	3	.0003	.0001	1.2972	.2898
S x G	3	.0000	.0000	.6913	.5096
Error	40	.0000	.0000		

Note: Time was maintained only for the experimental groups and not the control group.

[a]Efficiency $\frac{(\text{Changes})}{(\text{Time})}$ is defined as changes made, if any, from an undecided curriculum preference to a more specific career area in relation to the time required to complete treatments.

[b]Covariates employed were age and self-control.

Tests for Hypothesis Five

Hypothesis Five, the hypothesis related to repeated measures in the two-week follow-up, was supported by the analysis. Results are shown in Tables 18, 19, and 20 for the amount of satisfaction after two weeks with the vocational counseling received. Whereas differences were found in the four treatment groups immediately after counseling, the two-week follow-up showed no significant differences. Thus, Hypothesis Five, in its null form, cannot be supported.

The second part of Hypothesis Five predicted no differences in the amount of movement or changes from undecided to a specific career area two weeks after completion of the treatments. The results of this analysis are found in Table 21. Again, the results show that the hypothesis of no differences cannot be rejected.

One must consider several factors when analyzing the repeated measures results. First, of the 35 subjects in the three treatment groups, follow-up data were collected on 23. This greatly reduced the cell size with the subsequent loss of power for the test. Secondly, it was decided that because the covariates did not seem to contribute much in the original analysis, the repeated measures tests were done with a multivariate analysis of variance.

Table 18

Summary of the Repeated Measures Multivariate Analysis of Variance on Questions 1, 2, and 3 of the Self-Report Questionnaire

MANOVA (2 levels of sex X 4 levels of groups X 3 repeated measures)

Source	d.f.[a]	F	P <
Sex (S)	6, 28	1.124	.3728
Groups (G)	6, 28	.867	.5177
S x G	6, 28	1.136	.3679
Measures (M)	3, 14	1.040	.4052
M x S	3, 14	1.224	.3379
M x T	6, 28	.149	.9878
M x S x T	6, 28	.844	.5470

[a]D.F. are calculated based on the univariate d.f. for hypotheses, the univariate d.f. for error, and the number of measures.

Table 19

Summary of the Repeated Measures Multivariate Analysis of Variance on Questions 4, 5, 6, 7, and 8 of the Self-Report Questionnaire

MANOVA (2 levels of sex X 4 levels of groups X 5 repeated measures)

Source	d.f.[a]	F	P <
Sex (S)	5, 10	.988	.4711
Groups (G)	10, 20	2.229	.0611
S x G	10, 20	1.136	.3855
Measures (M)	5, 10	.951	.9509
M x S	5, 10	1.845	.1918
M x T	10, 20	.642	.7621
M x S x T	10, 20	1.124	.3927

[a]D.F. are calculated based on the univariate d.f. for hypotheses, the univariate d.f. for error, and the number of measures.

Table 20

Summary of the Repeated Measures Multivariate Analysis of Variance on Questions 9, 10, 11, and 12 of the Self-Report Questionnaire

MANOVA (2 levels of sex X 4 levels of groups X 5 repeated measures)

Source	d.f.[a]	F	P <
Sex (S)	4, 11	.201	.9328
Groups (G)	8, 22	1.649	.1678
S x G	8, 22	1.065	.4217
Measures (M)	4, 11	1.219	.3576
M x S	4, 11	.528	.7180
M x T	8, 22	1.175	.3573
M x S x T	8, 22	1.512	.2099

[a]D.F. are calculated based on the univariate d.f. for hypotheses, the univariate d.f. for error, and the number of measures.

Table 21

Summary of the Repeated Measures Univariate Analysis of Variance on Changes

ANOVA (2 levels of sex X 4 levels of groups X 1 repeated measure)

Source	d.f.[a]	F	P
Sex (S)	1, 17	.742	.4011
Groups (G)	2, 17	2.052	.1592
S x G	2, 17	2.232	.1378
Measures (M)	1, 17	.000	1.0000
M x S	1, 17	.000	1.0000
M x T	2, 17	2.232	.1378
M x S x T	2, 17	.992	.3915

[a]D.F. are calculated based on the univariate d.f. for hypotheses, the univariate d.f. for error, and the number of measures.

To summarize the results of the five hypotheses under investigation, significant differences were found between groups in the amount of movement or change to a specific career area and in the amount of satisfaction with the vocational assistance received. Post hoc comparisons revealed that although differences existed in the contrasts in favor of the PI+MM group, the only significant contrast was between the three experimental groups and the control group. There were no significant differences in efficiency $\left(\frac{\text{Changes}}{\text{Time}}\right)$ among groups, no sex X group interaction, and no differences in a two-week follow-up in movement and satisfaction.

Subsidiary Analyses

Several additional analyses were carried out for the data collected separately from the five main hypotheses. Although time required to complete the three treatment groups was relevant for Hypothesis Three, a univariate analysis of covariance on time was conducted to determine differences. The results in Table 22 indicate a group main effect ($p < .0024$). The means and standard deviations for each of the groups and for males and females are found in Table 23 and in Figure 4. The one-to-one counseling group produced the smallest mean time to complete treatments ($\bar{X} = 72.33$ minutes) and the smallest standard deviation (19.7 minutes). The programmed instruction

Table 22

Summary of the Univariate Analysis of Covariance on Time to Complete Treatments

ANCOVA (2 levels of sex X 4 levels of groups with 2 covariates)[a]

Source	d.f.	SS	MS	F	P <
Sex (S)	1	137.068	137.068	.0321	.8592
Groups (G)	2	65,396.998	32,698.499	7.6546	.0024
S x G	2	6,873.124	3,436.562	.8045	.4578
Error	27	115,337.574	4,271.762		

Note: Time was maintained only for the experimental groups and not the control group.

[a]Covariates employed were age and self-control.

Table 23

Means and Pooled Standard Deviations of Time To Complete Treatments[a]

Groups		Grand Mean	Sex	
			Male	Female
One-To-One Counseling	$\bar{X}$	72.33[b]	62.857	80.625
	S.D.	19.7	12.54	25.97
Programmed Instruction	$\bar{X}$	142.1	169.000	108.500
	S.D.	56.4	70.21	39.08
Programmed Instruction Plus Multimedia	$\bar{X}$	172.4	177.400	168.167
	S.D.	97.7	74.94	116.61

[a]Time to complete treatments was not maintained for the control group.

[b]Time is given in minutes.

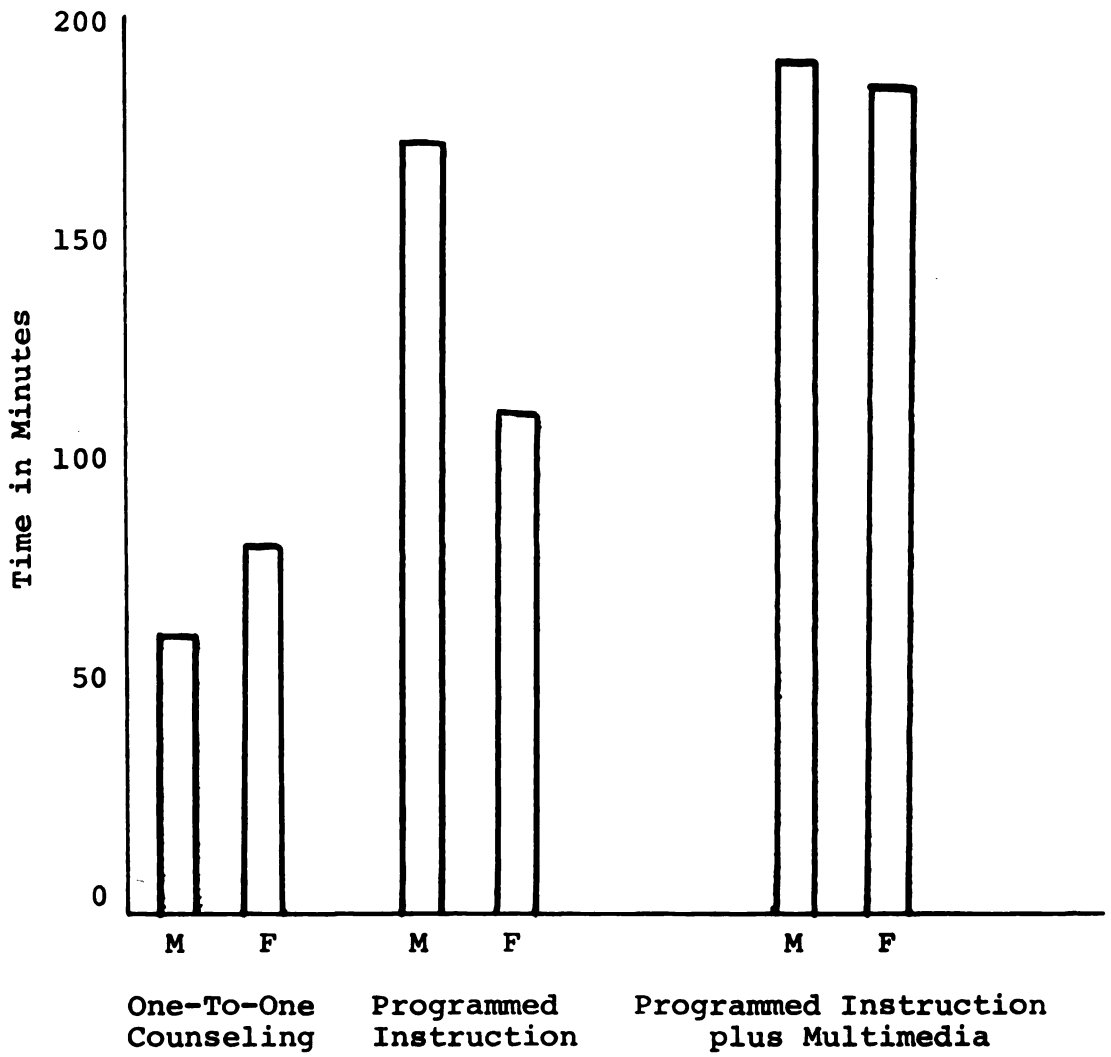

Fig. 4. Graphical presentation of mean amount of time to complete treatments

group produced the next highest average time ($\bar{X}$ = 142.1 minutes), followed by the programmed instruction plus multimedia group ($\bar{X}$ = 172.4 minutes). Males spent less time than females in the one-to-one counseling group but more time in both programmed instruction groups. The results are interesting in that although males spent more time in the programmed instruction groups, females made more changes in their curriculum codes in each of these groups. Scheffé post hoc comparisons (Table 9), however, showed that these differences were not significant.

Descriptive Analyses

A summary is found in Table 24 of the Vocational Preference Inventory (VPI) codes and the curriculum preferences of subjects changing from undecided to a more specific curriculum area. Of the 50 subjects in the experiment, 27 changed curriculum preferences after treatment. As indicated earlier, the PI+MM group produced the most changes (90%). Table 24 examines more closely the direction or apparent consistency of the new choices in comparison to the predicted high and low interest areas on the VPI. The information and analyses in this table were specifically used to provide additional information about the changes made by the subjects. It is not a procedure that has been used before, and, therefore, its validity as to providing useful

Table 24

Summary of VPI Codes and Curriculum Preferences of Subjects Changing from Undecided to a More Specific Curriculum Area

Groups	%	VPI Code	Curriculum Preference
One-To-One Counseling	9/15= 60%	AISREC	Music
		ACISER	Art
		IRECAS	Management
		ASRICE	Art
		EACSIR	Business
		IACRSE	Journalism
		ASRECI	Natural Resources
		CIESRA	Accounting
		ASIRCE	Liberal Arts
Programmed Instruction	5/9= 56%	AEICRS	Liberal Arts
		AIRSCE	English
		ARCISE	Music
		ISEARC	Teacher Aide
		CRAIES	Business Administration
Programmed Instruction plus Multimedia	10/11= 90%	ECAISR	Management
		IRCSEA	Teaching
		CREAIS	Assoc. in Science
		RAICSE	Teacher Aide
		SEACIR	Business
		ECSRAI	Business Management
		ICRSAE	Drafting
		ASECIR	Management
		SEACRI	English
		RICSAE	Pre-Engineering
Control	3/15= 20%	AIERCS	Economics
		RAIECS	Chemistry
		RIAESC	Parks and Rec. Resources

Note: R = Realistic, I = Intellectual, S = Social, C = Conventional, E = Enterprising, A = Artistic

information may be questioned. The assumption used with this procedure was that the VPI code for each subject was an accurate predictor of the real interests for that person.

Of the nine subjects who made changes in career choice in the one-to-one counseling group, five moved in the direction that was consistent with the first or second environmental modes of the VPI code.* Four of the five subjects in the PI group made consistent choices in comparison to their first or second tested score modes. Only three out of 10 in the PI+MM group made choices using the criteria established, whereas one of the three in the control group made a consistent choice.

Although this analysis was done descriptively and not statistically, it appeared that although the programmed instruction plus multimedia group provided the most movement, the changes that were made generally were not consistent with the scored VPI codes. This finding, though, was not true with the other programmed instruction group.

The second major area of descriptive data is found in Table 25. All the counseling interviews in the one-to-one counseling group were tape-recorded. This

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*The VPI code is a summary of the interest inventory results. It is listed with the highest interest area first. Thus, a code of AISREC would indicate the highest area in Artistic (A) followed by Intellectual (I) and Social (S).

Table 25

Frequency of Areas Covered by Counselors in the One-To-One Counseling Group
N = 10

Career Planning Areas[a]	Frequency
DISCUSSION OF DECISION-MAKING MODEL	0
SELF-EXPLORATION	
A. Health and Physical Capacity	1
B. Opinions of Parents and Others	2
C. Abilities	10
D. Interests	10
E. Values	0
F. Marriage and Career Decisions	3
G. Women and World of Work (If Applicable)	2
H. School Achievement and Satisfaction	2
I. Personality Traits	4
DISCUSSION OF EXPLORING INFORMATION ABOUT JOBS	7
UTILIZATION OF DECISION-MAKING PROCESS	
A. Choice of Plan of Action	0
B. Behaviors Related to Implementing Plan	7
C. Clarification and Review of Plan and Behavior	0

[a]Career planning areas were taken from the model used in the Self Help Career Planning Program (Graff, 1973).

was done to determine the content of the vocational counseling offered by the counselors. Because of problems in recording plus one subject not wanting to be taped, 10 of the 15 subjects in this group were considered for this analysis. The investigator listened to each of the tapes by using a Lexicron Varispeech machine which compressed the time span of the tapes. Major categories were established covering various aspects of vocational assistance. These were adapted using the model established by Graff's (1973) Self Help Career Planning Program.

The results showed that the counselors covered repeatedly with each subject the areas of abilities and interests. Discussing ways of gathering information about jobs was also frequently covered. Many areas, though, such as discussion and utilization of a decision-making model, a plan of action, and values of the subjects, were not covered in any of the taped interviews. It was clear that since the counselors interpreted the VPI results, a major part of the vocational counseling dealt with the discussion of interests and abilities.

Summary

Evidence supported the conclusion that significant differences existed in the number of curriculum choices subjects made after treatment. As predicted, the PI+MM group made the most changes, although the

Scheffé post hoc tests revealed that the only significant difference among five contrasts used was between the three experimental groups and the control group.

Significant differences were also found in the amount of satisfaction subjects felt about the vocational assistance received. Subjects in the PI+MM group were most satisfied, followed by the TC, PI, and control groups. Although significant differences existed, Scheffé post hoc comparisons indicated only significant differences at the .95 confidence interval between the three experimental and control groups.

There were no significant differences with efficiency $\left(\frac{\text{Changes}}{\text{Time}}\right)$ of the treatments. There also were no sex X group interaction effects. Although not significant, females tended to make more changes in the programmed instruction groups.

In a two-week follow-up, a repeated measures analysis revealed no significant differences in the amount of movement made and in the satisfaction with vocational assistance received.

A subsidiary analysis separate from the major hypotheses on time to complete treatment showed significant differences. Subjects in the one-to-one counseling group took less time to complete treatment than subjects in the two programmed instruction groups. Males spent less time in the one-to-one counseling

group and more time in both programmed instruction groups. Scheffé post hoc tests did not reveal any significant differences in the contrasts used.

Finally, descriptive data indicated, with a procedure that may have questionable validity, that of the 27 subjects who changed curriculum preferences after vocational assistance, more subjects in the one-to-one counseling group made changes consistent with the predicted scored interest areas of Holland's VPI. Also, an examination of topics covered by counselors during vocational counseling sessions showed that counselors covered repeatedly and consistently the areas of abilities and interests but generally did not include much information about decision-making, plan of action, or values.

CHAPTER IV

SUMMARY, DISCUSSION, AND CONCLUSIONS

Summary

The major purpose of this study was to compare and investigate the effects of three techniques to promote career decision-making in community college students. A secondary purpose was to examine the relative importance of the counseling relationship and to look closely at whether the absence of the counseling relationship could still produce differences in behavior. A final aim of this research was to assess the effectiveness of having people with little training interpret their own interest inventory scores and perform other functions that were heretofore performed by trained professionals.

Three techniques of helping people make career choices were experimentally manipulated in order to examine their effectiveness with people who were undecided about their career choice. The three techniques were: (a) traditional one-to-one counseling, (b) a

programmed self-instruction procedure, and (c) a programmed self-instruction procedure accompanied with multimedia materials.

Letters were sent to a random selection of students at Lansing Community College who were undecided about their curriculum preference during Spring term, 1974 registration. Sixty-eight subjects volunteered to receive vocational assistance. Fifty of the 68 subjects completed the treatment procedures and comprised the sample for this study. Each subject initially took Holland's Vocational Preference Inventory (VPI) and were randomly assigned to one of the treatment groups and a control group.

Subjects assigned to the traditional one-to-one counseling group were counseled individually by one of three full-time counselors at L.C.C. The VPI was interpreted, and the interviews followed the procedures typically used by the counselors with any person who needed assistance in choosing a career or a vocation.

Subjects assigned to the second group, the programmed self-instruction group, used Graff's (1973) Self Help Career Guidance Program to help them decide on a career. This is a programmed manual that provided information and structured tasks that dealt with various aspects of selecting a career. Subjects also interpreted their own VPI using a uniform guide prepared especially

for this instrument. Each subject worked alone and without the assistance of any counselor or other resource person.

The third group, the programmed self-instruction plus multimedia group, followed the same procedures as the programmed self-instruction group. In addition, subjects were exposed to various multimedia materials. Before beginning the programmed manual, subjects viewed an audiovisual slide presentation which visually depicted factors relating to career selection. As subjects progressed through the manual, at certain points they listened on cassette tape to information which covered the following areas: decision-making, using the Occupational Library, and the world of work. Subjects worked at their own pace without any assistance from the counseling staff.

Subjects assigned to the control group were inactive during the two-week period the experimental manipulations were being conducted. At the end of two weeks, subjects in this group were invited to participate in a group counseling experience which related to the VPI interpretation and exploration into career decision-making.

Time to complete treatment was maintained for the three experimental groups. After subjects completed the treatment phase of the experiment, and before the

control group received assistance, all subjects were asked to complete the Self-Report Questionnaire. This questionnaire measured the satisfaction subjects felt about different aspects of the vocational assistance received. At the bottom of the questionnaire, subjects responded to the following question:

> IF YOU WERE TO GO THROUGH REGISTRATION NOW, AND HAD TO INDICATE A CURRICULUM CODE OR CAREER AREA, WHAT CODE OR CURRICULUM AREA WOULD YOU CHOOSE?

This question was asked to measure any movement made by the subjects from an initial undecided status to a more specific career area.

In a two-week follow-up, prior to the end of Spring term 1974, subjects in the experimental groups were contacted by mail or in class to complete the Self-Report Questionnaire. An attempt was made to determine if any initial differences among groups remained intact or diminished over a period of time.

It was hypothesized that the programmed instruction plus multimedia group would make the most changes to a specific career area and that both programmed instruction groups would be more satisfied with the assistance received. In addition, it was hypothesized that both programmed instruction groups would produce more efficient outcomes, i.e., changes in relation to the time to complete treatments. It was also hypothesized that females in the programmed instruction groups would make

more changes to a specific career area than males. Finally, it was predicted that there would be no differences in a two-week follow-up in the amount of effective changes and in the amount of satisfaction with vocational assistance between groups receiving traditional counseling and groups using the programmed manuals.

The hypotheses were tested using a 4 x 2 fixed factorial design. The four levels of groups were crossed with sex of the subjects. Two covariates, age and self-control, were included in the design. A repeated measures variable was also used with measurement immediately after completion of treatments and in a two-week follow-up.

There were two major analyses performed on the data. First, a multivariate analysis of covariance (MANCOVA) was used with the 12 measures on the satisfaction scale and the two covariates. For the remaining dependent measures, a univariate analysis of covariance (ANCOVA) was employed. Significant findings were tested using Scheffé post hoc comparisons. Secondly, the repeated measures analysis was performed with a univariate analysis of variance (ANOVA). Other remaining data used in the study were analyzed in a descriptive manner.

Three of the hypotheses were supported by the results. Significant differences were found in the

amount of curriculum changes for each group and in the amount of satisfaction with the vocational assistance received. Subjects in the programmed instruction plus multimedia group made the most changes to a specific career area and rated highest of the groups on eight of the 12 measures on the Self-Report Questionnaire. Scheffé post hoc tests showed that although differences existed, significant differences were located in the contrasts between the experimental and control groups.

There were no significant differences in the amount of changes made in relation to the time to complete treatments. Subjects in the one-to-one counseling group completed treatment in less time than the programmed instruction groups. There was also no significant sex x group interaction, although females made the most changes in the programmed instruction groups. Finally, the null hypothesis of no significant differences in a two-week follow-up was not rejected.

Additionally, descriptive analyses revealed, using a procedure that has not had its validity or reliability established, that although more changes were made in the PI+MM group, the TC group provided the most consistent or appropriate changes. An appropriate change was defined as any change made that was consistent with the first or second scored VPI code. An examination of the content of the TC group showed that counselors repeatedly

discussed in the counseling interviews interests, abilities, and ways to gather information. They did not discuss any decision-making models, values, or plans of action.

Discussion

It is the purpose of this discussion section to deal with interpretations of the results that were found. The interpretations will relate to the major questions raised by this research: Can behavioral change occur without the presence of the face-to-face counselor-client relationship? Can people learn to change their behavior and make decisions through a program of self-instruction? What effect do media materials have in helping people make career choices? Can people with little training interpret their own inventory scores and perform other functions that were heretofore performed by trained professionals? What personal variables are associated with ways of helping people choose careers? And, what is the most efficient and effective method of helping people make career choices?

Before dealing with these questions, the external validity to which these findings can legitimately be generalized must first be determined. Subjects used for this research were community college students in their freshmen and sophomore years who had gone through

registration and had indicated they were undecided about a major or curriculum area. All subjects volunteered for counseling in response to a letter which suggested they receive vocational assistance. Therefore, any findings or conclusions from this research can be generalized only to vocationally undecided Lansing Community College students who volunteered for counseling. References to another population or to a problem other than vocational concerns would merely be speculative.

Can behavioral change occur without the presence of the face-to-face counselor-client relationship? Results showed that although the presence of an empathic counselor was important to produce changes in behavior, changes could also occur without its presence. Rogers' (1951) necessary and sufficient conditions for counseling (i.e., a warm, empathic counselor expressing unconditional positive regard in contact with a client who is in a state of uncongruence and perceives the counselor's unconditional positive regard and empathic understanding) have been examined in relation to vocational behavior. The ultimate test of these conditions is to show that behavior change will not occur when they are absent. Nine of the 15 subjects in the traditional one-to-one counseling group (60%) were able to make changes to a specific career area. However, five of the nine subjects (56%) in the programmed instruction group, and 10 of the

11 subjects (90%) in the programmed instruction plus multimedia group, were also able to decide on a specific major without the necessary and sufficient conditions present. Subjects in both these groups worked alone and were never in contact with any of the counseling staff.

One may argue that although subjects in the programmed instruction groups were not exposed to the counselor-client relationship, the mere fact they had to report to and work within the counseling center might in itself have produced changes. This might be an intervening variable that could account for the changes in behavior. However, a study by Graff, Danish and Austin (1972), which compared programmed instruction versus individual and group counseling, required subjects in the programmed instruction groups to work on the programmed manuals at home. Yet, findings showed that the programmed instruction groups were more effective in three of the seven criteria used and equally as effective in the other four. It appears, then, that although some of the differences may be accounted for by the powerful effects of working within the counseling center, differences must also be accounted for by other factors.

The presence of the Hawthorne effect may also have produced differences. The initial letter sent to the random sample of people indicated that a program was

developed to specifically meet the needs of vocationally undecided students. Although each of the subjects who volunteered was randomly assigned to the treatment groups, the effect of being in a project could have diminished once subjects in the one-to-one counseling group began seeing a counselor and increased for subjects in the two programmed instruction groups. Working with programmed manuals and viewing audiovisual materials might have heightened the awareness of being in a project or experiment and spuriously produced higher results.

The Hawthorne effect may have been counteracted by what might be called "please the counselor" effect. Many times clients change their behavior because they know that it will please the counselor to do so. Subjects in the programmed instruction groups had no counselor to please; and, thus, the "please the counselor" effect would not seem to be present.

The content of the assistance given could also have produced differences. The descriptive analysis of the taped interviews in the one-to-one counseling group revealed that counselors typically covered the areas of interests (by interpreting the VPI), abilities, and ways of collecting information about jobs. The programmed instruction groups received information in these areas and were also given assistance in other areas of career guidance. It appeared that more emphasis was placed in

the programmed instruction manuals on actually making a decision. Counselors concentrated more on looking at interests and abilities while deemphasizing the need to make a decision. If the counselor had covered the same material that was presented in the programmed instruction groups, a better understanding of the necessary and sufficient conditions would have been determined. Since the programmed instruction groups were given more information over many areas, this added factor could have produced differences.

In summary, although the presence of the counselor-client relationship is important for behavior to change, results have shown that at least for changing behavior related to vocational decision-making, its presence does not suggest a necessary and sufficient condition.

Can people learn to change their behavior and make decisions through a program of self-instruction? This question is related to the one previously mentioned. Results showed that a program of self-instruction for community college students who were vocationally undecided was a viable way of helping them change their behavior and make decisions. Subjects were able to work at their own pace and learn the concepts that dealt with making a career choice.

Although people were able to change their behavior through a programmed instruction approach, it

appeared that some people disliked working by themselves without the guidance of a counselor. Of the 68 subjects who were assigned to the treatment and control groups, 18 did not complete the entire treatment. Fifteen of these 18 came from the programmed instruction groups (see Table 3). Two explanations could account for this finding. Once the subjects began working in the programmed instruction groups, it is possible they were "not rewarded" by the idea of working by themselves. They may have been disappointed that they were not going to see a counselor and had to change their original expectations. The idea that could have prevailed for these 15 people was, "I couldn't make a decision before by myself, how can I do it now?" Since the programmed instruction groups took longer to complete, the passing of additional time may also have produced subject mortality. Each treatment group was given a two-week time limit to complete the tasks, but the two programmed instruction groups required the subjects to visit the counseling center more than the individual counseling. Community college students, like most college students, want immediate results. If the results cannot be secured quickly, in one or two interviews with a counselor, the choice of action might be to quit rather than continue. This explanation may also account for the low ratings of the control group. It was two weeks from the time they

took the VPI to the time they received assistance in interpreting it. They, too, could have been discouraged by the time lag and, therefore, rated lower than usual.

Reasons given to the secretaries by subjects who dropped from the experiment included: "I had to get a job," "dropped out of school," "moved to another city," "It's not what I thought it would be," and "I don't have the time." It seemed clear that time was a factor for many people.

People can learn through a program of self-instruction, but it requires that they have the time and energy to work for the results. These requirements, however, are necessary for any approach that is used to help people.

What effects do media materials have on helping people make career choices? The results showed that the presence of multimedia materials clearly had an effect on both the amount of curriculum changes made and the amount of satisfaction with the assistance received. Ninety percent of the subjects in the PI+MM group changed to a specific career area in comparison to 56% of the PI group. In relation to the Self-Report Questionnaire, the PI+MM group gave an overall rating of 4.13 on the 5-point scale. The PI group rated 3.68 the help received. Both groups followed the same procedure except for the introduction of the audiovisual materials.

Several reasons may be hypothesized concerning the positive effect of the multimedia materials. First, the materials presented were supplementary to the materials read in the programmed manual. It was pointed out earlier that the mere presence of additional materials could possibly account for differences. Secondly, the audiovisual slide presentation served as an appropriate model to follow. Watching others change their behavior and decide on a career possibly made it easier to visualize the process of career selection. It is also more concrete than one-to-one counseling which tends to be more abstract. Third, watching color slides and hearing cassette tapes are reinforcing for many people. It is a change from the traditional "learning by reading" mode and could possibly motivate people to change. Fourth, the audio presentation on the cassette tapes could have been construed by many subjects as a counselor talking to them. The presence of a helping and knowledgeable person, even if he/she was not seen, could conceivably have produced a feeling in the subjects that they were communicating with a counselor. Finally, as mentioned earlier, the audiovisual materials required that subjects spend more time in order to complete their tasks. A positive relationship might possibly be involved between time and effectiveness of vocational counseling.

Can people with little training interpret their own inventory scores and perform other functions that were heretofore performed by trained professionals? Subjects in both programmed instruction groups were required to interpret and evaluate their VPI results. Traditionally, test interpretation is done by trained individuals. The results have shown, though, that test interpretation, at least for the VPI, can be equally as effective without a counselor present. Subjects in the one-to-one counseling group did give higher ratings to questions four and five of the Self Report Questionnaire which were related to the VPI interpretation and evaluation (see Table 14). However, the higher ratings were not significantly different from the ratings of the programmed instruction groups. The findings of no significant differences is particularly surprising considering the amount of time counselors spent during the counseling interviews discussing interests and the VPI. There is certainly a difference, though, in having people evaluate the help they received in interpreting their test results and actually understanding the concepts involved. Although the PI+MM group rated the information received on the VPI quite helpful, they did not move in a direction (three out of 10) that was consistent with the VPI code. This was not true for the PI group as four out of five moved in the direction predicted by the VPI.

The interpretation of the VPI was not difficult, particularly when only the first six scales were used. One could not logically conclude that untrained people with a standardized format to follow could be equally as effective as trained counselors in interpreting tests other than the VPI. However, with sufficient training, people other than professionals could be taught to handle this phase of the vocational counseling process.

What personal variables are associated with ways of helping people choose careers? It was shown in Chapter III that the covariates of age and self-control contributed little to the prediction of the dependent variables. From this research, it is difficult to conclude the effects of these variables. One finding, although not statistically significant, was that the longer the time required to complete counseling, the more self-control was needed. This was particularly true for the programmed instruction groups.

Sex differences were evident in several areas. Females, when compared to males, gave higher ratings to the help they received (3.7 versus 3.4). Females also made more changes in curriculum preferences in each of the groups except the control group.

Males required less time to complete the one-to-one counseling group. This could be interpreted in three ways: (a) Males change their behavior quicker

when a counselor is present; (b) males are less satisfied when working with a counselor and terminate the sessions faster; or (c) females enjoy the counseling relationship and prefer a longer time period than males.

Females spent less time in the programmed instruction groups yet made more changes in these groups. This finding runs counter to the earlier notion that the more time spent in receiving help, the greater the changes that will occur.

None of the sex differences mentioned above were statistically significant. This indicates that the results may be reversed if the study were repeated. One may see, though, that differences in techniques may tend to produce differential results in males and females.

What is the most efficient and effective method of helping people make career choices? Results from Table 17 showed that none of the groups were statistically significant in relation to efficiency $\left(\frac{\text{Changes}}{\text{Time}}\right)$. Therefore, this question cannot be conclusively answered from the findings of this research.

It was shown that in relation to time, the one-to-one counseling group took less time to complete. In relation to movement, the programmed instruction plus multimedia group produced the most changes. If efficiency in counseling is defined as a saving in time,

the one-to-one counseling group would be preferred. At first, this would appear to be true. However, the results are different when other than total time is considered. The counselor was able to counsel one subject at a time, whereas two, three, or more subjects were able to work concurrently on receiving career help in the programmed instruction groups. Thus, the average time per subject is decreased for the programmed instruction groups.

If efficiency is measured by the amount of behavioral changes that occur, the PI+MM group would be the most efficient. If efficiency is defined as the techniques which satisfy the most people, then again, the PI+MM group would be most efficient. If efficiency of assistance is related to the number of subjects who complete counseling in comparison to those who begin, the one-to-one counseling group would be preferred. Finally, if efficiency is defined in relation to the effects of the assistance over time, none of the treatments, as used in this research, could be considered efficient.

In summary, the major questions raised by this research have produced results that generally were supportive of the hypotheses generated. They have also raised additional questions to which future research must address itself.

Conclusions

It is the purpose of this section to draw conclusions and to discuss recommendations for further research. Based on the results from this research, several conclusions can be made. First, the results of this investigation as well as those of Graff, Danish, and Austin (1972), and Gilbert and Ewing (1971) indicate that programmed instruction is a viable alternative to one-to-one counseling for assisting vocationally undecided community college students. Second, it can be concluded that the introduction of multimedia materials in conjunction with the programmed instruction procedures provide an even more powerful effect in helping people make career choices. Third, results show that undecided students are most satisfied with the assistance received if the procedure includes programmed instruction plus multimedia materials. Fourth, and perhaps most important, this research has shown that ideally people seeking career assistance may have a choice between several equally effective alternatives.

This investigation has generated some interesting hypotheses which may serve as starting points for future research. Recommendations for improving several features of this research include the following: (a) pay close attention to the number of subjects who are sent letters requesting they receive vocational assistance.

Community college students do not volunteer readily in response to written letters, and care needs to be taken to solicit enough subjects for an adequate cell size; (b) if covariates are to be employed, use those variables which have a high degree of prediction for the set of dependent measures. A covariate that may be used is time to complete treatment; (c) find ways of decreasing mortality, particularly in the programmed instruction groups; (d) attempt to make sure motivation of the subjects remains high throughout the study; (e) if the significance of the counselor-client relationship is to be truly tested, isolate this relationship and eliminate all possible intervening variables. Standardize the information given by the counselors with the programmed instruction groups. If differences then occur, more significance can be attributed to the absence or presence of the counseling relationship; and (f) before concluding that untrained people are capable of interpreting their own interest inventory results, determine whether they have grasped the main concepts involved.

In addition to the topics and issues covered in this research, future research related to examining methods of vocational assistance should investigate various personal variables of the subjects. The ultimate goal for vocational counseling, as in any counseling, is to find the technique that matches the individuality of

any person who needs vocational assistance. Additional counseling-related tasks should also be established for subjects to determine the full extent to which untrained people may be able to function without the assistance of a counselor. The use of media should be investigated by varying both the types of media used and the times they are introduced into the counseling process. Investigations should also be made to determine if positive features of several techniques could be combined. One suggestion is to use counselors as consultants for people working with a programmed instruction approach. Finally, future studies should deal with the extent career choices remain consistent over time.

APPENDICES

APPENDIX A

LETTER SENT TO STUDENTS AT L.C.C. WITH CURRICULUM OF 100 (UNDECIDED) SUGGESTING THEY RECEIVE ASSISTANCE IN MAKING A NEW CAREER CHOICE

Lansing Community College
419 N. CAPITOL AVE., LANSING, MICHIGAN 48914

Serving the Heart of Michigan

April 19, 1974

Dear Student:

A recent review of the Spring Term, 1974 registration indicated that there are many students who have not decided upon any particular vocation or career area. A coding of 100 as the curriculum preference has revealed to Lansing Community College that you are one of those students who is still undecided.

Many people start college without declaring a major and this may be appropriate for them. For those people who are concerned about choosing a major, it is important that certain steps be taken early by each person so that his/her time, money, and future planning are as productive as possible. For most people, choosing a career is one of the more important decisions that will be made in life.

The Student Development Services of L.C.C. has developed an exciting and meaningful program I believe you will be interested in. This new program is designed to assist those people who are interested in making career choices. A lot of time and energy has been put into making this an effective program. We think you will benefit from participating in this project. The total time commitment from you will be approximately two to four hours spread over a two week period. The little time spent now could save you a lot of time for the future, and make your life more meaningful and satisfying.

I hope you are interested. If so, please call 373-7036, 373-7140, or 373-7076, or stop by any of the counseling offices in 207 Old Central, 208 SPS, or 105 CAS before May 1, 1974. When you do call or stop by any of these offices, make sure you tell the secretaries that you are calling about the career planning project. If we do not hear from you by May 1, 1974, we will assume that you are not interested in participating. An interest test will be provided for those who contact us, and will serve as a starter for the project.

Thank you for your cooperation.

Sincerely,

Beverly Hunt

Dr. Beverly Hunt, Director
Student Development Services

pmp

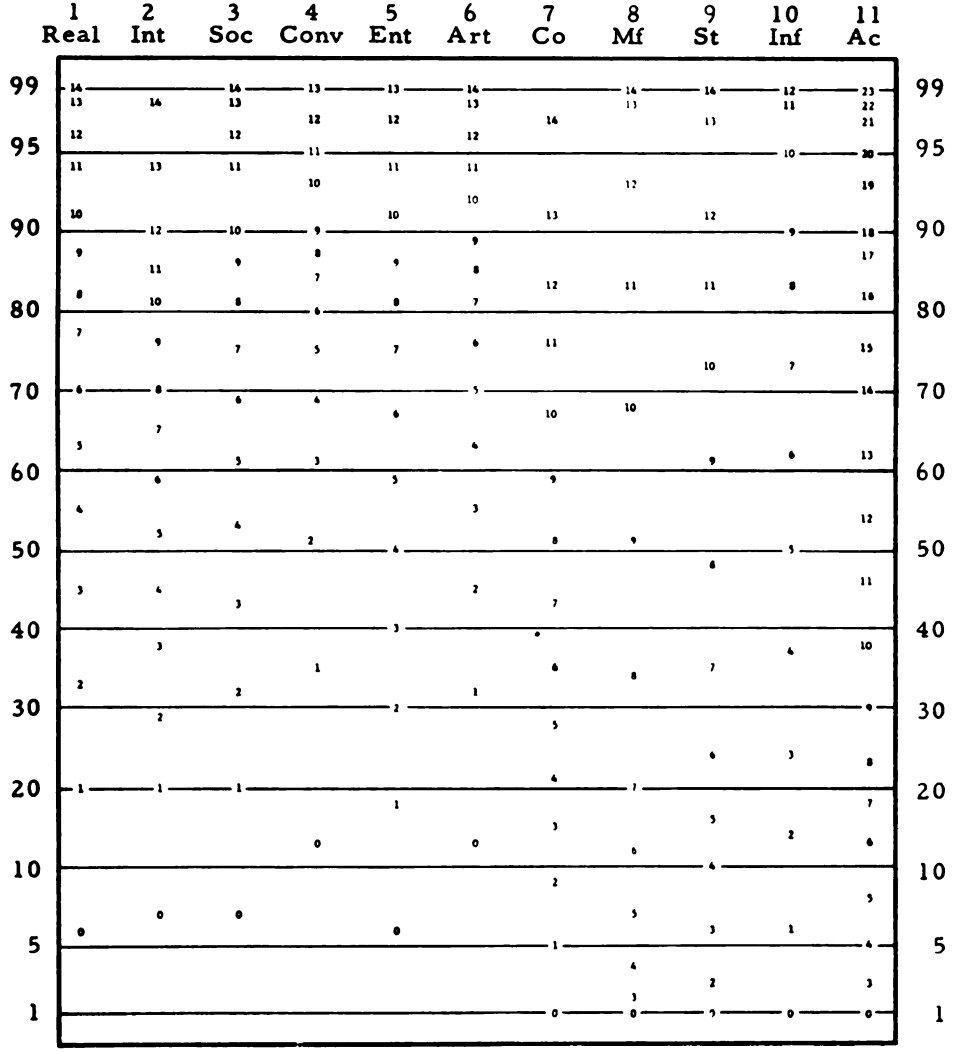
APPENDIX B

VPI PROFILE

VOCATIONAL PREFERENCE INVENTORY *by John L. Holland*

MALE PROFILE
(College Freshmen, N = 6270)

Name _____ Age _____ Date _____



VPI Code _____

Vocation _____

Major _____

Other Data _____

_____

_____

_____

_____

CONSULTING PSYCHOLOGISTS PRESS
577 College Avenue, Palo Alto, California 94306

APPENDIX C

THE SELF-REPORT QUESTIONNAIRE

APPENDIX C

SELF-REPORT QUESTIONNAIRE

Rate the following categories in relation to the amount of help received:

	Extremely Helpful	Quite Helpful	Somewhat Helpful	Not Helpful	Worse Than No Help
1. Becoming aware of the various academic majors at L.C.C.	5	4	3	2	1
2. Becoming informed of vocational opportunities and requirements.	5	4	3	2	1
3. Securing information about occupations. That is, advantages, disadvantages, training, wages, etc.	5	4	3	2	1
4. Interpreting my interest test.	5	4	3	2	1
5. Evaluating my interest test.	5	4	3	2	1
6. Learning how personal-social factors have an effect on vocational choice.	5	4	3	2	1
7. Investigating my philosophy of life or values.	5	4	3	2	1
8. Investigating my philosophy of life or values to see their implications for vocational choice.	5	4	3	2	1
9. Learning about how to make educational decisions.	5	4	3	2	1
10. Learning about how to make vocational decisions.	5	4	3	2	1
11. Setting up educational goals consistent with my measured abilities, interests, and personality.	5	4	3	2	1
12. Setting up vocational goals consistent with my measured abilities, interests, and personality.	5	4	3	2	1

IF YOU WERE TO GO THROUGH REGISTRATION NOW, AND HAD TO INDICATE A CURRICULUM CODE OR CAREER AREA, WHAT CODE OR CURRICULUM AREA WOULD YOU CHOOSE?

_____

NAME_____

APPENDIX D

IN-SERVICE VPI TRAINING PROGRAM

FOR COUNSELORS

APPENDIX D

IN-SERVICE TRAINING SESSION ON HOLLAND'S VOCATIONAL PREFERENCE INVENTORY

I. Administration of the VPI

- A. All training participants will take the VPI.
- B. Results will be provided upon completion of the inventory.

II. The Vocational Preference Inventory

- A. Purposes
- B. Holland's theory and structure of the VPI
  - 1. Realistic
  - 2. Intellectual
  - 3. Social
  - 4. Conventional
  - 5. Enterprising
  - 6. Artistic
- C. Advantages
- D. Disadvantages

III. Interpretation of Results

- A. What does it all mean?
- B. How to use the VPI in a counseling session.

IV. Explanation of Career Planning Project

April 17, 1974
Lansing Community College

APPENDIX E

IN-SERVICE TRAINING FOR SECRETARIES

APPENDIX E

INSTRUCTIONS FOR SECRETARIES

Directions:

The name of the project you will be involved in is the CAREER PLANNING PROJECT. Letters have been sent to a random sample of 800 students who have gone through Spring term registration and wrote "undecided" (code 100) for their curriculum preference (see the attached letter).

These students have been instructed to come by or call one of the three counseling centers. If a person calls, use the following procedures:

1. Write down his/her name, address, and phone number. Write the information about everyone on the same sheet of paper for easy referral later.

2. Tell him/her to come by your counseling center within the next two or three days to take an interest test. No appointment is necessary, and the test will take approximately 15-20 minutes. Mention also that the office hours are 8:00-12:00 and 1:00-5:00 Monday through Friday.

3. Thank him/her for calling and participating in the project. Be encouraging and show that we really appreciate his/her cooperation and effort with the project.

If a person comes to the counseling center, use the following procedures:

1. Check first to see whether the person has called ahead of time or whether he/she is contacting the center for the first time.

2. If the person has called before concerning the project, check his/her name on your original list of phone callers. Check the information for accuracy.

3. If the person has not called before, add his/her name, address, and phone number to the original list of phone callers.

4. After the information has been collected or has been checked against the phone list, simply give the person one copy of Holland's Vocational Preference Inventory and one answer sheet. The instructions are self explanatory. Allow the person to take the interest test in a place where he/she will not be interrupted for about 20 minutes. The test is <u>not</u> timed.

5. While the person is taking the test, call Pat at SPS. She will be

coordinator for all the volunteers. Simply give her the name and sex of the person(or persons) taking the interest test. After collecting the information, she will give you a number--either 1, 2, 3, or 4.

A. If it is number 4, take out the directions labeled #4. Hand these directions to the person after he/she has completed the test.

B. If it is number 3, hand the person the directions for #3 after completion of the test. When the person has completed reading the directions, make sure he/she understands them. Tell the person he/she can begin receiving vocational assistance beginning the following day. Direct the person how to get to Room 207 Olds Central.

C. If it is number 2, hand the person the directions for #2 after completion of the test. When the person has completed reading the directions, make sure he/she understands them. Tell the person he/she can begin receiving vocational assistance beginning the following day. Direct the person how to get to Room 207 Olds Central.

D. If it is number 1, Pat will also give you a counselor's name, room number, and time to write into the blank spaces. Give the directions to the person after completion of the test. If the time is not agreeable with the person, call Pat back and arrange an appropriate time.

6. After handing out the instructions, thank the person again for his/her time and cooperation.

After your initial contact with the people (i.e. when they have taken the test and received their instructions), there will be several things left to do:

1. For people coming in for treatment #1, they will be seeing a counselor. Handle these people in the same way you would handle any person coming in to see a counselor.

2. For people coming in for treatment #2, direct them to the appropriate room where they can work. More than one person may be in a room at a time. Write on the outside of their folder the time they enter the room and the time when they return the folder to you. Do this each time they come in. We are interested in seeing how long they take to complete the treatment, although we don't want to mention that to them.

3. For people coming in for treatment #3, direct them to the appropriate room where they can work. Only one person can work in the room at a

time because of the audio-visual equipment. Like in treatment #2, write on the outside of their folder the time they enter the room and the time they return the folder to you.

The last thing that has to be done is to give the people in treatments #1, 2, and 3 the Self-Report Questionnaire. All the people have been instructed to come to you when they complete their work and fill out the questionnaire.

APPENDIX F

DECISION-MAKING

APPENDIX F

DECISION-MAKING

Many people find that the reason they are having difficulty making a career choice is that they simply don't know how to make a decision. Most people take decision-making for granted, and fail to realize that decision-making is a process that can be learned.

People are faced with decisions everyday. Some decisions are: What time should I get up? What should I wear today? What should I eat? When should I study? What time should I go to bed? These decisions are relatively easy to make, and most people make them almost automatically. Larger decisions such as: What school should I attend? Should I get married? What major should I pursue in school? And, what job area should I go into? These are more difficult to make and require that people follow a systematic process of decision-making.

The first point to consider when making a decision is to realize that a decision has to be made. This seems like an obvious point, but many people fail to make a decision because either they are not aware of the need to make a decision or they are not sure they want to make a decision. This realization needs to be made first and is a good check to determine whether there is sufficient motivation to continue with the decision-making process.

The second step is a listing of alternatives. Making a decision implies that there is a choice among two or more ways of action. If there was only one course of action, then the only decision to make would be to follow that course of action, or do nothing which in itself, is also a decision. As the saying goes, "Not to decide is also a

decision." However, typically a person has a choice of several alternatives from which to choose. For example, if a person like yourself is trying to make a decision about a career or curriculum area, that person might list the following as possible alternatives: teacher, counselor, engineer, nurse, and business manager. These represent several possible alternatives that a person may choose to follow to reach the goal of selecting a career area.

The next step after listing alternatives is to gather information about each of the alternatives. The more a person knows about each of the alternatives, the better chance he has of making a decision, and the more likely he will not change his mind again in the future. To continue the example just mentioned, if a person has a choice to make among several careers, he goes around attempting to gather specific information about each of them. What is the job like? How much training does it take to enter the job area? How much does the job pay? What are the advantages and disadvantages of the job? Answers to these and other questions need to be made before making a decision. Several ways one may gather the information are: a) talking to someone who holds a job in an area such as talking to a teacher; b) reading a description of the job from books and pamphlets found in the Occupational Library; c) writing to organizations such as the Bureau of Statistics or more specifically, to the National Educational Association if the job of teaching is an alternative; and d) observing a person actually working in an area that interests you. These are ways to gather information, and many times it is helpful to take notes of the

new information. That is important because it will be used in the latter parts of the decision-making process.

Once the information has been gathered, then each alternative is checked as to its desirability of attainment. What this means is that each alternative is looked at in light of each person's interests, values, and goals. For example, if one of the laternatives in selecting a career is the area of nursing, then all aspects of nursing are compared to one's intersts, values, and goals. If a person is interested in helping people and enjoys the feeling of taking care of people, then one can easily see that the desirability of the alternative nursing is very high for that person. Discovering what your interests, values, and goals are can be done through taking interest tests or simply listing the goals you have set for yourself in life. Once this is done, then each alternative is checked for its desirability.

The next step is similar to the preceeding one. Each alternative should now be checked as to its probability of attainment. A person may find that a particular alternative is very desirable, but may not be too probable to achieve. As an example, if a person feels that the area of teaching is desirable because it is consistent with her interests and goals of helping and working with people, it may not be a probable alternative to achieve if she has little money for four years of schooling and needs to get a job within the next year. This step, then, is the reality step. In essence it is saying, "Of all the alternatives I've listed, which ones do I feel that I not only like, but that I also have a good chance of attaining?"

After each alternative is checked as to its desirability and probability of attainment, then a decision needs to be made for each alternative. The decisions are:

1. Drop the alternative from consideration.
2. Retain the alternative to be considered with others.
3. More information is needed before a decision can be made.

If more information is needed, simply go back and gather more information and move through the process previously followed. After this is done, simply ask the question, "Do I want to keep or drop this alternative?"

After the decision is made to keep or maintain several of the alternatives, a new list of remaining alternatives is made. This list represents all those alternatives which have been checked and are desirable and probable to attain. From this list, a rank order is made of each of the alternatives with the top alternative being the one best liked and most probable, and so on down the list. Following the previous example, a person may rank engineer, counselor, and teacher in order of preference. If so, then engineer becomes the first choice and represents the career the person has decided which is realistic and will best satisfy his/her needs for employment. Other remaining alternatives are still maintained and rank ordered. This is done in case something happens, and the first alternative cannot be fulfilled. The second alternative is then considered as the next best course of action.

The final step in the decision-making process is an important one. This is the action step and is a plan for implementing the decision. Decisions are not of much value if there is no way of getting them put in action. If a decision is made on a career choice or curriculum area, then steps should be taken to begin planning a program in school that will be needed to either graduate or transfer to another school. It is this step which allows people to follow through on decisions and makes them come true in the future.

Decision-making is not easy to do. It involves a lot of work and time to find the one or two alternatives which represent the best course of action. One can easily see, though, that the time spent prior to making a decision can be done systematically with a minimum amount of effort. This decision-making process is an assurance that the final decision reached is one that has been investigated, thought through, and tested against reality in the best way possible.

APPENDIX G

USING THE OCCUPATIONAL LIBRARY

APPENDIX G

USE OF OCCUPATIONAL LIBRARY

Deciding upon a career requires a lot of time, work and energy. Many people find that the more information they can gather about jobs and different careers, the better able they are to eventually decide upon a career. One good place in which to gather information is called the Occupational Library.

Perhaps you are already familiar with the Occupational Library. Or, maybe you have heard others talk about it, but you really aren't sure what is included in the library. In short, the Occupational Library is simply a place which contains books and pamphlets, and provides information about many careers. It is usually located near the counselor's office in many colleges. If it is not near the counselor's office, it is perhaps located in a central location and may be called the career center. It may even be found in the main library.

The Occupational Library includes books which everyone should become familiar with. The most important book is the Occupational Outlook Handbook. This book is printed yearly and contains up-to-date information about jobs in many areas. It describes job characteristics, employment outlooks, amount of education needed to enter particular jobs, salaries, advantages, disadvantages, and future employment trends. That is, the future prospects of finding a job in the area you are interested in. These factors are very important and should be considered before making a definite career choice. It also gives an address at the end of each job area in which to write and gather further information if needed.

To use the Occupational Outlook Handbook, simply go to the index in the front of the book, and look up the job or jobs you are interested in. It might even be important to take notes while you are reading so that you may easily remember the information later when you are ready to make a decision.

A second important source of information is the occupational files. These files have pamphlets or brochures about certain jobs. They usually are easy to read and quite informative too. Many times, if the library has a large supply of the pamphlets, they can be taken for free and used for one's own personal use. These pamphlets also have an address in which to write if further, and perhaps more detailed information, is needed.

The Occupational Outlook Handbook and the occupational files are two good sources to gather information about particular jobs. If the job you are interested in contains further schoolong beyond the community college level which would necessitate having to transfer, then Lovejoy's College Guide and The College Handbook would be good sources to look at. They provide facts about entrance requirements, costs, programs offered, and other information related to various colleges and universities. Many times secretaries in the counseling office have applications and pamphlets from some of the universities, and you may talk to them if you are interested in one or several colleges.

Secretaries also have a listing of all the majors and curriculum areas offered at L.C.C. For each of these curriculum areas, a listing is included of all the courses that are necessary to take while at L.C.C. to complete a degree or to use for transfer to another school. There is even

a general listing of courses for those who are undecided. This is used as a guideline to follow until a more definite career area is decided upon.

The Occupational Library can be of great help to you. How often you use it depends upon your need for occupational information. Familiarity with the occupational library is certainly an important first step in the career decision-making process.

APPENDIX H

THE WORLD OF WORK

APPENDIX H

THE WORLD OF WORK

When people begin thinking about what job area they might like to go into, it is important that they know certain facts and information about the world of work. Questions that might be asked before deciding upon a job or vocational area are:

1. What jobs are open?
2. What is the nature of the work called for in that occupation?
3. What are the economic and social rewards of employment?
4. Is the demand for workers rising or falling?
5. Is there a surplus or shortage of trained personnel to work in that area?
6. What are the minimum educational and skill competencies that must be met for entry into the occupational area?
7. How and where does one secure the necessary training?
8. What are the costs of such training and preparation?

Information about the world of work provides an interesting picture about the labor force and the factors which affect the availability of jobs. In 1972, there were 81 million people in the labor force, which constitutes 40% of the United States population. It is expected that by 1975, there will be 93 million workers, and by 1985, 107 million workers. Statistics show that each year more than 2½ million people enter the job market, and approximately 1½ million workers retire, die or leave.

The labor force is changing not only in numbers but also in the proportion of people who are in it. There has been a sharp rise in the

number of women in the labor force. In 1970, women comprised one out of three workers in the labor force. In 1920, the average woman worker was single and 28. In 1963, she was married and 41. Seventy-six per cent of the women in the labor force are found in the four occupational categories of clerical workers, operatives, service, and professional and technical. These four occupational categories also encompass 92% of all non-white women. Approximately 10 percent of the labor force is non-white. The proportion of the labor force that completed a high school education was 56.2 per cent in 1964, and in 1971, it was up to 6%. General trends for 1985 show the following changes:

1. Increase in the 25 to 44 year old group for males and females.
2. Proportionally greater increase in female vs. male participation.
3. An increase of older females 55-64, while males in the same age group will decline.

It is obvious to most people that the job market is always changing. The occupational picture for one job area may look good one year, but in several years, it may not look so good. It is important, then, when looking at the world of work, to understand those factors which affect the job market:

1. Fluctuation of the economy. Employment in the areas of manufacturing, transportation, and contract construction tends to fluctuate widely in reaction to the level of economic activity. In contrast, job areas such as service, finance, and government show

more employment stability. The professional fields such as teaching, medicine, and social work are affected by the economy but not as much as an area such as sales.

2. Population changes. Industries such as construction, communications, retail trade, teaching, and health professions are greatly affected by changes in the population. As an example, the baby boom after World War II caused a great need for more teachers in the 50's and early 60's. However, now that the population growth has slowed, the need for additional teachers is not as great. People today are also living longer and therefore, there is a greater need for medical and health services for the aged. In general, as the population changes, so does the demand for certain occupations.

3. Supply of workers. The number of workers in the labor force greatly affects the possibility of entering certain job areas. The supply of workers for any occupation changes due to death, retirement, or transfer to another job. An overabundance of workers in any area reduces considerably the possibility of finding employment in that area.

4. Public demand and supply for goods and services. Industries producing such things as clothing, gasoline, and food fluctuate greatly depending upon the need for these items. For example, the energy crisis which diminished the supply of gasoline caused many service stations, automobile manufacturers, and other large industries to lay off thousands of workers. A reverse example in this is the increased public demand for color TVs and the subsequent increase in the number of technicians and repair people to service these TVs.

5. Legislation. Many jobs are influenced by legislation that is passed by the federal government. The passing of the Social Security Act and child-labor laws reduced considerably the number of workers in the labor force. The military draft, when it is in effect, lowers the number of draft-age men in the work force. Yearly increases or decreases in budgets for space and defense activities result in increases or decreases in the need for people in many job areas. The passing of the Civil Rights Act in 1964 opened the doors for many non-whites into occupations which previously employed only whites.

6. International relations. The relationship of the United States with foreign countries is an important factor in many job areas. War causes changes in many job demands and brings about a need for workers in areas not needed during peacetime.

7. Technological changes. Technological advances have eliminated many skilled and semi-skilled workers. However, at the same time, they have also created new types of jobs. Whereas computers have assumed many of the tasks usually done by clerical workers, they have also brought a need for qualified people trained in programming computers. Automation has also increased the quantity and quality of goods on the market and has produced a higher standard of living. The trend toward shorter work weeks due to increased automation has added many more hours of leisure time for people and has increased the need for workers in recreational and sport areas.

8. Seasonality of occupations. Many occupations are seasonal and alternate high and low periods of employment. Farm workers and auto-

mobile workers typically are affected at different times of the year. Industries which vary little from season to season are transportation, wholesale trade, and services.

9. Other factors. There are several other factors, although not as important as the ones just mentioned, yet which also affect the job market. They are changes in licensing requirements, gradual depletion of natural resources, business-labor disputes, and management and union policies.

As one can easily see, there are many variables which affect the number of people working the labor force. A person need not concern himself with all the factors just mentioned. However, while deciding on a curriculum or job area, several of the factors should be considered. There are several sources of information for studying about the world of work. At the federal level, there is the Bureau of the Census, the Bureau of Labor Statistics, the Bureau of Employment Security, the Women's Bureau, the Chamber of Commerce, and the Manpower Commission. At the state level, the State Employment Security Agency provides statistics on many jobs found in the state.

Knowledge about the world of work can help people decide which career areas to pursue. The extra work in the beginning to gather information will help you in selecting the type of job for you.

APPENDIX I

SCRIPT FOR AUDIOVISUAL PRESENTATION

APPENDIX I

CAREER PLANNING

Being in college is a rewarding and enriching experience for many people. College is a time to meet new people, and to learn many new and exciting things. College provides the opportunity to grow and to develop competencies and skills that will be useful in later life. College is also a time for planning course work and other experiences that will prepare people to eventually enter the world of work.

Many people enter college and know exactly what curriculum area to follow. Some people prefer not to choose one area and opt instead for taking classes in several areas. This may be an appropriate course of action for them. For others, however, the decision to enter a particular area is not easy to do. These people find that choosing a career area they will take courses in and will go into after graduation is a decision they find quite difficult.

There are several reasons why people are undecided about a specific career:

1. They may think that choosing a career is a result of magic or a special formula.
2. They may think that selecting a career area is a matter of chance not choice.
3. Some people may feel that they may need a premonition from Heaven to tell them what area to choose.
4. Some people are simply lazy and would rather have someone else pick an area for them.
5. In a more serious light, some people simply lack the necessary information to make an appropriate decision.

6. Many people may have the necessary information, but they lack the knowledge of the decision-making process.

Whatever the reasons may be, it is important to understand that choosing a career involves time and work to explore yourself and many external factors that are necessary to make an appropriate career choice.

You're probably asking yourself now, "What are those things that I must consider before I decide on a career?" Let's look at them one at a time:

First, Self-Exploration. It is important that a person know and understand many things about himself or herself. Health and physical capacities are certainly one part of this. One would not expect a large person to work in a job such as plumbing which requires squeezing into many tight spots, or a person who does not work easily with his hands to work as a surgeon. A person must be physically capable of handling the duties of a job in order not to cause harm to himself or others. Along these same lines, a person must be aware of his abilities. If a person aspires to be a truck driver, auto mechanic, surveyor, or machinist, he must have the skills or be able to learn the tasks of working in these jobs. Or, if becoming a math teacher is the goal, the ability to work easily with numbers is a necessity.

Self-exploration additionally involves looking at one's interests and values. People enter jobs that are interesting to them. For example, if working with people is an interest, then consideration should be given to jobs such as teaching, medicine, social work, police work, or counseling. Looking at one's hobbies may reveal additional things about the interests of that person. The job you choose must also be consistent with your own values. Some people value making lots of money in life, and should therefore consider those jobs that have the potential for large incomes. Some people value self-expression and fulfillment and prefer jobs that allow them a

chance to be themselves.

Insight into one's personality characteristics is another consideration in self-exploration. Each occupation requires different types of people. A person who may be described as aggressive, ambitious, forceful, persistent, and dominant may well enter the area of law or politics, but may not fit as easily into an area such as elementary teaching, the ministry, or counseling.

Second, Job Exploration. Once a person has insight into various facets of himself, he must begin looking at the world of work. The questions asked during this stage of the process are, "What jobs are available that are consistent with my interests, values, and personality characteristics?" "How do I find out what people who work in certain jobs actually do?" And, "How much training do I need to have in order to be considered for certain jobs?"

These questions and many others similar to them need to be answered before deciding upon a career area. What is involved with this stage, then, is an active search into the world of work. Facts about jobs such as salaries, working conditions, training requirements, areas of employment, and future employment trends are necessary to gather and are usually found in the Occupational Library. The more information that can be gathered about a job or several jobs, the easier it will be to eventually make a decision.

The final aspect to consider is the process of Decision-Making. Once exploration has been done about one's self, and information has been gathered about jobs and the world of work, then the next step involves making a decision. Many people are not aware that decision-making is a systematic process that can be learned, and once it is learned, can be applied to any area that requires a decision to be made.

Decision-making initially involves a listing of all the possible alternatives or courses of action. More specifically, it involves a listing of

all the possible jobs or curriculum areas you feel interest you enough to make your final choice from. Once this list is generated, a check is made to see whether there is enough information known about each alternative. If more information is needed, then it may be necessary to go to the Occupational Library located outside the counselor's office or to your school's main library. Descriptive information about certain jobs is readily available there.

After information is gathered, two questions are asked:

1. Which alternatives are desirable to me in relation to my interests, values and goals?
2. Which alternatives have the best probability of coming true in the future?

Once these questions are asked, a ranking is made of all the alternatives. The top alternative or job area represents the first choice, the second represents the second choice, and so on down the line.

After this decision is made, a plan of action for implementing the decision must be devised. This is important because it ensures that the time spent during the decision-making process has not been wasted. It enables the decision maker to follow through on his decision.

Look now at an example of a person who has decided he wants to make a decision about a career or vocation. Follow Lloyd as he proceeds through the three stages of·

Self-Exploration

Job Exploration

Decision-Making

Self-Exploration

Lloyd must first begin looking at himself to see what type of person he is, what he is interested in, and what goals he wants to achieve in life. To

get this information, Lloyd may go to many sources. He may talk to his friends and family members to receive feedback on how they perceive him. He may take a personality test and have a counselor interpret the results to him. He may talk to teachers and have them assess his personal characteristics. Finally, Lloyd may simply list those traits he feels describe him best.

After doing this, Lloyd lists the following traits as characteristic of himself:

1. Easy-going
2. Friendly
3. Persistent
4. Cautious
5. Orderly
6. Self-sufficient

Next, Lloyd looks at his interests and values. He may take an interest inventory to discover his personal interests and those occupational areas interesting to him. He may also list those values and goals he finds important in life.

Lloyd lists the following interests and occupational areas he shares interest with:

Interests	Occupational Areas Interested In
1. Likes people	1. Education
2. Likes to work with his hands	2. Medicine
3. Enjoys being creative	3. Social Work
4. Likes a challenge	4. Tool and Die

He lists his values as:

1. Happiness
2. Honesty
3. Independence
4. Humanitarianism

Job Exploration

Once he has explored his interests, values, and goals, Lloyd begins looking at certain job areas and attempts to gather information about the world of work. He may talk to teachers or people in the community, or he may go to the Occupational Library. In the Occupational Library, he may look at pamphlets and the Occupational Outlook Handbook. This is a valuable book to look at and includes information about many jobs.

Decision-Making

Now that Lloyd has looked at himself and gathered information about several job areas, he begins the third and final phase of decision-making. He first lists the alternatives he feels represent job areas he wants to decide from. They are:

1. Teaching
2. X-Ray Technology
3. Police Work
4. Carpentry

Next he looks at these job areas in relation to their desirability and probability of attainment. He sees that teacher, X-ray technician, and police officer satisfy his interests of working with people, whereas carpenter and X-ray technician would allow him to work with his hands. They all would allow him a certain amount of independence and give him the happiness

he values so highly.

Lloyd next looks at how probable or realistic these job areas are. Teaching and carpentry would take at least four years to reach, and Lloyd knows that with his limited income, he needs to find a job after two years of college. Police work and X-ray technology both seem more probable of attaining.

After considering all the factors up to this point, Lloyd lists the four jobs in order of preference:

1. X-Ray Technology
2. Police Work
3. Teaching
4. Carpentry

With X-ray technology as his decision, Lloyd now begins looking at the curriculum guides to see what courses he needs to take in order to reach his goal.

The case of Lloyd has demonstrated, although somewhat simplified, that the process of choosing a career takes time, effort, and a lot of exploration into personal and external factors. The pay-off to this effort, though, is the chance to choose a career that is interesting and stimulating.

Are you ready to begin the challenge?

APPENDIX J

INSTRUCTIONS #1

APPENDIX J

#1

Directions:

In order to assist you in selecting a career area, you will be assigned to one of the counselors at Lansing Community College,_____, in Room_____, at_____. After the first meeting with your counselor, if additional meetings are needed, then times should be co-ordinated with the counselor's schedule. Since there are many people involved with this project, a limit of two weeks from your initial session has been set to complete counseling. Use as many meetings as you and your counselor feel are necessary within this two week period.

Thank you for your cooperation and time. We hope that this experience will be beneficial to you in helping you select a career choice.

APPENDIX K

INSTRUCTIONS #2

APPENDIX K

#2

Directions:

Your participation in this project will involve activities in which you will be working by yourself. Rooms have been set up at 207 Old Central for you to work on your career planning. These rooms will be open from 8:00-12:00 and 1:00-5:00 Monday through Friday. Feel free to come in at any time at your convenience. On the average, people will take one to three sessions to complete all the work. Since there are many people involved with this project, a limit of two weeks from today has been set to complete your career exploration.

Thank you for your cooperation and time. We hope that this experience will be beneficial in helping you select a career choice.

APPENDIX L

INSTRUCTIONS #3

APPENDIX L

#3

Directions:

Your participation in this project will involve activities in which you will be working by yourself. Rooms have been set up at 207 Old Central for you to work on your career planning. These rooms will be open from 8:00-12:00 and 1:00-5:00 Monday through Friday. Feel free to come in at any time at your convenience. On the average, people will take one to three sessions to complete all the work. Since there are many people involved with this project, a limit of two weeks from today has been set to complete your career exploration.

Thank you for your cooperation and time. We hope that this experience will be beneficial in helping you select a career choice.

APPENDIX M

INSTRUCTIONS #4

APPENDIX M

#4

Directions:

Now that you have taken the interest test, there will be a waiting period of two weeks before work begins on helping you select a career choice. At that time, you will be contacted by one of the secretaries by phone to give you the times when the career workshop will begin. Please make sure before you leave that the secretary has a phone number that she can reach you with.

Thank you for your cooperation and time. We hope that this experience will be beneficial to you in helping you select a career choice.

APPENDIX N

INSTRUCTIONS FOR COUNSELORS

APPENDIX N

INSTRUCTIONS FOR COUNSELORS

Directions:

Approximately five to seven people will be assigned to you. They have been given directions prior to seeing you (see attached copy). It is important that all the counseling sessions be completed within two weeks of your initial session.

Simply conduct the counseling sessions as you would any vocational problem. A cassette recorder plus tapes will be provided for you to tape your interviews. These tapes will be kept completely confidential and will be erased upon completion of the project. The intent is merely to get a feel for what actually happens during a typical counseling session involving a career exploration problem. If a person does not want to be taped, his/her prerogative must be granted at all times. If it is taped, mark the client's name, your name, the date, and the session number on each of the tapes.

It is also important that each of your counseling sessions be timed. The purpose for this is to determine as closely as possible the average time it takes to complete an entire case involving a vocational concern.

Once counseling is completed, make sure that the person completes the Self-Report Questionnaire. The secretary in your office will have these questionnaires. Please do not read the forms until after you have counseled all your people. Doing so beforehand might contaminate the study. After the project is completed, if you are interested in receiving feedback from your clients, it would be very easy to share this with you.

Thank you for your time and cooperation.

APPENDIX O

DIRECTIONS FOR THE PROGRAMMED SELF-HELP GROUP

APPENDIX O

#2

Directions:

While working on selecting a career, you will be performing many activities. Before you begin, make sure that you have the following things with you:

1. Pen or pencil.
2. Self Help Career Guidance Program (in folder).
3. Summary of your Vocational Preference Inventory (in folder).

Each of the activities you will be doing will be taken one at a time. You may stay in the room for as long as you want, but please try not to go over one hour at a time. You will be working at your own pace, and it is hoped that you will complete everything in as many sessions as you need within the next two weeks. There is plenty of time to complete all the tasks, so try not to rush through everything. If you reach a point where you would like to stop working until a later time, simply place these directions, the Self Help Career Guidance Program, and the Summary of your Vocational Preference Inventory back into your folder and hand it to the secretary.

Now you should be ready to begin.

Step I: Read Part One of the Self Help Career Guidance Program. Before beginning, it may be helpful to know that this booklet was originally designed for high school seniors. It has been used, though, quite successfully with college students in the past. Slight modifications have been made in the booklet for easier use by you.

Step II: Read Part Two of the Self Help Career Guidance Program.

Step III: Read Part Three of the Self Help Career Guidance Program up to the middle of page 19..

Step IV: Read the Summary of your Vocational Preference Inventory.

Step V: Read Part Four of the Self Help Career Guidance Program. On the bottom of page 23, it suggests that you go to the Occupational Library for information. This is located in the waiting area of the counseling center.

Step VI: Read Part Five of the Self Help Career Guidance Program.

Step VII: Read Part Six of the Self Help Career Guidance Program.

Step VIII: Read Part Seven of the Self Help Career Guidance Program.

You are now finished. Thank you for your time and cooperation. We hope this experience has been beneficial to you in helping you select a career choice. We would like to have you evaluate your experience, so before you leave, please pick up and fill out the Self-Report Questionnaire. The secretary will have the questionnaire at her desk.

Thanks again!!!

APPENDIX P

SUMMARY OF THE VOCATIONAL PREFERENCE INVENTORY

APPENDIX P

SUMMARY OF YOUR VOCATIONAL PREFERENCE INVENTORY

On the following page, you find the results of your interest test. Your scores have been compared with those of many college freshmen (these are called test norms), and the resulting profile shows what your interests are.

As you look at your profile, you will see numbers going horizontal from 1-99. These represent percentile ranks. If, for example, your score on one of the scales was in the range between 40-60, you could conclude that your interest level was about average in this area. 70-99 would indicate a relatively high interest, and 1-30, a relatively low interest. Your VPI code on the upper right shows you the ranking in order of your interests.

The letters across the top of the scale represent broad interest areas. Going left to right, they are: Realistic, Intellectual, Social, Convential, Enterprising, and Artistic. Look now at pages 19-21 of your self-help booklet to see what these categories mean and what occupations they represent.

If your profile shows that you have one area that is ranked higher than all the others, this indicates that, based on the way you answered the test items, jobs in this area are most interesting to you. If you have two or perhaps three areas that are ranked high, it shows that you have interests in more than one area. This could be a plus factor, but it could also mean that the reason you have not decided on a career choice, is that there is no one particular area that interests you, but rather many areas. This could keep you from making a decision.

If you have what is called a flat profile with no significant high or low points, this indicates that you have not shown any strong likes or dislikes in any one of the areas.

It is also important to see if there are any conflicts between areas. Since each scale represents particular interests, two areas that may be rated

high yet represent conflicting job areas, may also be a factor in not having decided upon one career. What needs to be looked at, then, is the consistency of your profile pattern. Are there any inconsistencies in your profile?

Depending on how your profile looks, the following suggestions should be considered:

1. If there is one high area that stands out among the rest, you should seriously consider looking further into jobs in that area.

2. If you have two or three high areas, you may be wise to investigate jobs in each of them. You may also want to see if there are any overlaps between the areas so that a compromise career satisfying your interests in each of the categories could be found.

3. Persons with a flat profile should look further at their interests, values, and personality characteristics. There is probably some confusion with them. Perhaps not knowing enough about certain occupations could be a reason, and more investigation into various careers should also be done.

4. Do not overlook low points on the profile. Knowing what areas you are <u>not</u> interested in can be as important as other factors in helping you make your decision.

APPENDIX Q

DIRECTIONS FOR THE PROGRAMMED SELF-HELP PLUS MULTIMEDIA GROUP

APPENDIX Q

#3

Directions:

While working on selecting a career, you will be performing many activities. Before you begin, make sure that you have the following things with you:

1. Pen or pencil.
2. Self Help Career Guidance Program (in folder).
3. Audio-visual recorder.
4. Cassette tape recorder and Tapes A, B, and C.
5. Summary of your Vocational Preference Inventory (in folder).

Each of the activities you will be doing will be taken one at a time. You may stay in the room for as long as you want, but please try not to go over one hour at a time. You will be working at your own pace, and it is hoped that you will complete everything in as many sessions as you need within the next two weeks. There is plenty of time to complete all the tasks, so try not to rush through everything. If you reach a point where you would like to stop working until a later time, simply place these directions, the Self Help Career Guidance Program, and the Summary of your Vocational Preference Inventory back into your folder and hand it to the secretary.

Now you should be ready to begin.

Step I: Put the headphones on, press the start button, and view the video presentation.

Step II: Read Part One only of the Self Help Career Guidance Program. Before beginning, it may be helpful to know that this booklet was originally designed for high school seniors. It has been used, though, quite successfully with college students in the past. Slight modifications have been made in the booklet for easier use by you.

Step III: Place Tape A (Decision Making) into the cassette recorder and push the "play" button.

Step IV: Read Part Two of the Self Help Career Guidance Program.

Step V: Read Part Three of the Self Help Career Guidance Program up to the middle of page 19.

Step VI: Read the Summary of your Vocational Preference Inventory.

Step VII: Play Tape B (Occupational Library).

Step VIII: Play Tape C (World of Work).

Step IX: Read Part Four of the Self Help Career Guidance Program. On the bottom of page 23, it suggests that you go to the Occupational Library for information. This is located in the waiting area of the counseling center.

Step X: Read Part Five of the Self Help Career Guidance Program.

Step XI: Read Part Six of the Self Help Career Guidance Program.

Step XII: Read Part Seven of the Self Help Career Guidance Program.

You are now finished. Thank you for your time and cooperation. We hope this experience has been beneficial to you in helping you select a career choice. We would like to have you evaluate your experience, so before you leave, please pick up from the secretary and fill out the Self-Report Questionnaire.

Thanks again!!!

APPENDIX R

LETTER SENT DURING TWO-WEEK FOLLOW-UP

APPENDIX R

A. LETTER MAILED TO HOME

Dear:

The Career Planning Project in which you participated has been completed. On behalf of the Student Development Services Department, I would like to thank you for your cooperation. We are interested, though, in having you re-evaluate some of the activities that you went through to see if you still feel the same as you did the first time you filled out the questionnaire.

Please fill out the form and return it to us as soon as possible. A self-addressed stamped envelope has been enclosed for your convenience. Instead of mailing, you may also return the form to any of the three counseling centers.

We are hoping you will give us your cooperation with this last phase of the project. We would like to have the forms no later than Friday, June 8.

Thank you,

Project Director

B. LETTER SENT TO CLASS

Dear:

The Career Planning Project in which you participated has been completed. On behalf of the Student Development Services Department, I would like to thank you for your cooperation. We are interested, though, in having you re-evaluate some of the activities that you went through to see if you still feel the same as you did the first time you filled out the questionnaire.

Please fill out the form during this period and return it to _____ immediately after class. If the door is locked, simply slide it under the door.

Thank you,

Project Director

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REFERENCES

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